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MALIGNANT DISEASE OF THE GENITO-URINARY SYSTEM*

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WE will consider briefly three of the most common regions of involvement—the kidney, the bladder and the prostate.

KIDNEY

The common tumor in this region is the so-called hypernephroma. The hypernephroma is viciously malignant and in contrast to the lymphatic extension of so many cancers, invades the distant parts of the body by direct transmission of tumor cells through blood-stream channels beginning with the renal vein. Metastases are usually found in bone, lungs or liver.

True carcinoma of the kidney has no features which differentiate it clinically from the more familiar hypernephroma, and the pathological argument that surrounds the distinction between these two types of renal malignancy has no part in this discussion.

Sarcoma of the kidney is usually encountered in the mixed tumors of childhood but sarcomatous growths do occur—rarely in the adult—arising in many instances from the renal capsule. I have seen one such case in the past ten years.

A still further small but important group of renal tumors arises from the epithelium of the kidney pelvis. These are the papillomata, all of them potentially malignant; and the papillary carcinomata. Their diagnosis has been more accurate in the past few years with improvement in cystoscopic and pyelographic technique. New growths of the renal pelvis are interesting in that they are prone to secondary implants along the ureter and in the bladder, so that in the treatment of these tumors, radical extirpation of the kidney and of the entire length of the ureter including a segment of the bladder, is necessary.

We have all been taught that tumors of the kidney signal their presence by three cardinal signs—pain, a mass in the region of the kidney, and blood in the urine. Pain may occur soon or late in the disease and so varies in its importance as a symptom in early diagnosis. It arises from tension of the renal capsule as it is distended by the enlarging growth, from the retention of blood in the kidney pelvis—"acute hematonephrosis" or from the passage of blood clots downwards along the ureter. It may vary in intensity from dull ache in the lumbar region or flank to severe paroxysmal pain radiating to the groin and genitals and closely simulating the colic due to stone. Mild degrees of fever in these patients and a slight leucocytosis are not inconsistent with the diagnosis of neoplasm.

The palpable mass in the region of the kidney is a far more frequent initial sign than it ought to be from the standpoint of the early detection of these tumors. Extensive involvement, especially when the mass is fixed and has lost its respiratory excursion, suggests strongly that metastasis has already occurred. Smith and Shoemaker, reviewing 62 cases of hypernephroma at the Massachusetts General Hospital between 1900 and 1923, found that the first routine physical examination revealed an enlarged kidney in 75% of this group. They urge very properly that "every case of enlarged kidney should be regarded as suspicious, whether or not it is accompanied by hematuria and should be pyelographed, for it is possible to have an advanced hypernephroma without hematuria or pain."

The most important sign of renal malignancy in most instances, I believe, and still perhaps the most neglected is the presence of blood in the urine. Pain always gets a hearing; a palpable tumor is sure to stir us into activity, but hematuria still too often escapes too lightly. Bleeding in these cases may be early or late, but it is often early. The blood may be microscopic or gross but when renal hematuria is gross it will be total, that is the whole stream at a given voiding will be stained.

Any one of these symptoms or signs demands prompt investigation. The final diagnosis rests, of course, upon complete cystoscopic study with x-ray and pyelography. In this study, bloody urine coming from one of the ureters sometimes may be seen during the preliminary bladder inspection if the bleeding chances to be active at the time of examination. Both ureters are catheterized and separate kidney samples are withdrawn for the routine comparison by microscopy and culture. A divided function or phthalein test done at this time is of the greatest importance in these cases, revealing a depression of

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normal renal activity on one side as compared with the other.

The x-ray films may outline a kidney shadow which is abnormally large but the most valuable facts of all usually come with the pyelogram. The deformity of the pelvis outline is characteristic and definite when the tumor has developed to any extent, but in the early cases, the slightest departure from the normal may be significant.

The treatment of malignancy of the kidney is nephrectomy. Unless the general health is too depleted and unless there are obvious metastases, the operation may be advised even in locally advanced cases to protect the patient against the further ravages of pain and bleeding. Finally, surgery should always be followed by intensive deep x-ray therapy in an effort to prevent or retard local recurrence and lymphatic extension.

BLADDER

Cancer, developing in the mucous membrane lining of the bladder, has been divided, for clinical convenience, into two types: diffuse or infiltrating carcinoma and papillary carcinoma. Infiltrating carcinoma presents as a rule a sessile, broad-based tumor which grows in the bladder wall rather than into its cavity. There is often ulceration of its mucous surface. Its histological picture varies greatly as Ewing points out and as one would expect from the varied types of cells which occur in transitional epithelium.

Papillary carcinoma—much more amenable to treatment—usually begins in a relatively narrow stalk or pedicle from which it expands in bush-like formation into the bladder cavity. In advanced cases, the whole bladder may be filled with villous tumor tissue. The main stalk and the branches of this growth consist of the epithelial surface and a central stroma made up of blood vessels, connective tissue and variable amounts of smooth muscle. When we realize the great surface area of such a tumor, it is apparent how impossible it may be to judge finally concerning its malignancy from the examination of a single section. This consideration is important in these cases, for papillary carcinoma of the bladder in many instances (Buerger says 30 to 36 per cent.) is preceded by a purely benign papilloma. Such a papilloma may remain benign for many years but they are all potentially malignant and should be so treated. During the benign stage, these tumors may and usually do bleed actively, giving hematuria once or many times; during the benign stage, moreover, they are readily amenable to cure, sometimes by operation, but more often by means of simple fulguration through the cystoscope. These facts give obvious emphasis to the importance of early diagnosis and illustrate again that the *neglect of hematuria is inexcusable.*

Papillomatous tumors of the bladder are often multiple either at the same time or in series over a period of years. A patient once afflicted therefore must always be seen at regular intervals thereafter, for inspection of the bladder through the cystoscope.

Carcinoma in this region, whether diffuse or papillary, spreads rather slowly through lymphatic channels to the glands of the pelvis from which extension is usually upwards through the retroperitoneal nodes along the aorta. Rarely, metastases have been found in liver, lung and bone. I have recently seen a patient with advanced carcinoma of the bladder and destruction of the upper third of the left radius through metastatic disease.

The signs and symptoms of bladder malignancy rest primarily upon local disturbance of function, and changes in the urine. Those general effects of cancer, such as loss of weight, strength and color, which are so characteristic of carcinoma in most regions, are less conspicuous in these cases. Bladder tumors, as a rule, grow slowly; they metastasize locally; and it is common experience to find well-advanced malignant disease in this organ in patients who appear to enjoy good health and vigor. Indeed marked deterioration when present is more often due to kidney embarrassment and sepsis because of blocked ureters, than to the direct results of cancerous invasion. It is unfortunately true, moreover, that even local distress may be delayed, for in some instances there is a long silent period during which the growth gains considerable headway before it produces marked discomfort.

The local symptoms in these cases vary with the size of the tumor, its position within the bladder, the readiness with which it bleeds, the presence or absence of infection, etc. There may be increased frequency of urination, with getting up at night, because the vesical musculature has been rendered more irritable through the presence of the growth. There may be varying degrees of obstruction or incontinence but the presence of these symptoms and their severity will depend entirely upon the position and extent of the mass. Pain is not usually an early symptom or an important one, unless infection has complicated the picture in which case, of course, every form of discomfort will be accentuated.

Crusting of the tumor surface with urinary salts or calcification in devitalized areas also will greatly heighten the patient's distress.

Finally, and by far the most important; blood in the urine. This may be microscopic or gross. When the urine is grossly bloody, the whole stream is usually colored and clots are often passed. Infrequently the hematuria is terminal—that is, appearing at the end of a clear stream as when a tumor near the vesical neck is made to bleed only with the final contraction of the bladder at the close of micturition. In most instances there is no pain with the passage of blood, even when clots are present. Painless hematuria is the sign of supreme importance in

these cases; it is a signal of serious trouble and always demands immediate investigation.

The diagnosis of bladder tumors is made by cystoscopic inspection of the bladder cavity. This is so quick, and so simple, and, nowadays, so lacking in serious discomfort for the patient that there can be no excuse for withholding it in any case in which there can be the slightest suspicion of malignant disease. Far better a negative examination than a neglected carcinoma. There are occasional cases in which the size of the mass or active hemorrhage may prevent clear vision and in these the cystogram is a useful aid. This, as you know, is an x-ray film made after filling the bladder through a catheter with an opaque solution. Filling defects caused by new growth are sometimes shown quite strikingly in this manner.

The treatment of bladder malignancy still varies greatly with individual differences in opinion and experience but considerable progress has been made, nevertheless, within the past few years. Until very recently most of these tumors were excised surgically. The operations necessary to accomplish this were often hazardous and technically difficult and they were accompanied by great shock and a high mortality. This was especially true in those cases involving the floor of the bladder and the trigone, and necessitating transplantation of one or both ureters; unfortunately the greater number of bladder growths are so situated. The convalescence was usually difficult and prolonged and, while the immediate result was often brilliant, the end results were uniformly bad, in all clinics. The game was distinctly not worth the candle for patient or surgeon. Since the advent of radium, however, with deep x-ray and surgical diathermy, the picture is markedly changed. To be sure, the situation is still far from satisfactory but it is better. There is more hope of cure in the early cases and, in the advanced cases, the patient may be afforded greater relief with less risk.

Technical details do not belong in this discussion but we will review briefly the various methods of treatment as they are now widely used:—Surgery, radium, diathermy and deep x-ray.

It is generally conceded that surgery alone is best adapted to sharply limited growths involving the dome and anterior wall of the bladder, where wide excision is possible without disturbance of the structures in the region of the trigone. (Shock and the immediate mortality are in direct proportion to the degree of interference with the ureters.) Even these favorable dissections should be carried out with the high-frequency knife which lessens hemorrhage and the dissemination of tumor cells.

An additional surgical possibility in which there is growing interest may be mentioned at this time. I refer to total cystectomy which removes the entire bladder, the ureters being implanted into the large bowel, or into the skin. Obviously this radical operation must be restricted to a carefully selected group of cases in which there is no evidence of extension beyond the bladder wall. It has not yet been done long enough or by a sufficient number of operators to warrant any definite conclusions as to its value.

Radium, in my opinion, affords the ideal method of treatment for the broad-based sessile infiltrating carcinoma which is too extensive or too unfavorably placed for surgical excision. It is commonly used in the form of emanations, in gold or platinum seeds which are imbedded within the substance of the growth. It may be applied occasionally through the cystoscope, in small tumors conveniently located, but in most instances it is far better used under the accurate guide of touch and vision through a suprapubic wound. Such an operation involves but little shock and carries a very low mortality.

Electro-coagulation with high frequency current has proved to be of the greatest usefulness in destroying those fungating carcinomata of the papillary type which grow out from a pedicle into the bladder cavity. The base of the stalk itself may be treated in the same manner or radium seeds may be used in addition. Fulguration through the cystoscope should be reserved in general for benign lesions. The diathermy electrode has properly supplanted the old forms of tissue destruction by heat, for it is infinitely superior. It penetrates more deeply and more uniformly; and, properly used, it avoids the insulating effect of char. Its heat, moreover, is engendered in the tissues, where it belongs, and not in the instrument itself.

The rôle of deep x-ray, at the present time at least, is that of a palliative measure. It should be used in all those cases which have progressed beyond the aid of the other methods of therapy, in an effort to retard the growth and lessen the distressing effects of hemorrhage. It belongs always in the post-operative program, moreover, to prevent as far as possible, lymphatic extension beyond the original site of disease.

PROSTATE

Malignant disease of the *prostate* in most clinics, occurs in 15 to 20% of all patients admitted for prostatic obstruction. Histologically, it is usually typical carcinoma, or adenocarcinoma; malignant adenoma and scirrhus carcinoma have been described but are rare. The most important predisposing factor, according to Ewing, is chronic hypertrophy, and he quotes several authors to the effect that early cancerous changes may be found in about 19% of the glandular enlargements. Pathologically and clinically there appear to be prostates which are relatively small, hard, and frankly malignant from the start. In a larger group, however, carcinoma develops against a background of previous benign hypertrophy. (Sarcoma of the prostate may be mentioned but it is rare; it develops earlier in life, is viciously malignant and is some-

times mistaken clinically for an inflammatory disease.)

Extension of cancer through the capsule of the gland first takes place in the region of the seminal vesicles which are often invaded early and may be completely obliterated. The characteristic direction of growth is thus upwards back of the bladder and secondary deposits frequently develop in this organ. All of the adjacent structures may be included, in cases of very advanced local involvement, when the whole pelvis becomes fused in one malignant mass.

The spread of this disease away from the primary area along lymphatic channels to regional nodes and distant organs is far less frequent than in the case of many other carcinomata. Metastases from the prostate are common but they are characteristically found in bone. The lumbar spine, pelvis, and upper femora are the regions most frequently affected. Moreover, it is of diagnostic importance to remember the unfortunate fact that bony metastases occasionally occur before the prostate itself has shown marked changes. In such cases, without definite local symptoms, one must be careful not to overlook the gland entirely and mistake the clinical picture for arthritis.

The local and general symptoms of carcinoma of the prostate may closely simulate those of benign hypertrophy for they arise from the same causes,—obstruction at the bladder outlet and residual urine. Sphincter disturbance is often more marked, however, because of active malignant invasion of the sphincter muscle. The degree of retention or incontinence, therefore, sometimes seems quite out of proportion to the changes in the size of the gland that one can feel or see.

Painful urination is a little more common than in the benign condition even apart from the complication of infection. The significant pain in this disease, however, is that of the "lumbago" and "sciatica" that these patients so frequently complain of and that result from nerve-root pressure due to bone metastases.

Grossly bloody urine, except in late stages, is less typical of the malignant prostate than of the benign one. Microscopic hematuria, of course, is common.

Finally, as we hear the story, there are usually reported in some degree those changes in weight, strength and appetite that so often mark the presence of carcinoma.

The diagnosis of malignancy of the prostate rests first upon the rectal examination. The gland may be small and hard, or it may be large and hard. It may be smooth or nodular. There may be indurated areas in a structure which otherwise feels benign. The most important feature, however, lies in an upward extension of induration into the seminal vesicle region on one or both sides, obliterating the normal, clearly-defined, rounded upper limits of the lateral lobes and the notch that lies in the mid-line between them.

Of course it is not always so easy for there must of necessity be border-line problems. The small fibrous prostate and chronic inflammatory disease may approach some of these changes. In such doubtful cases, valuable aid is obtained by an inspection of the bladder outlet through a small examining cystoscope. Carcinoma produces characteristic distortions that are usually readily recognized by this method.

The story, the rectal examination and the cystoscope should be sufficient to make the diagnosis. Confirming evidence is sometimes obtained from the blood picture which may show definite anemia, and x-ray films, detecting bone metastases, are often of the greatest assistance, also, in arriving at a decision.

The experience in the treatment of carcinoma of the prostate rather parallels that with carcinoma of the cervix;—that is the general results are infinitely better when we stop trying to excise the tumor. Radium, in my opinion, is the ideal treatment for this disease and surgery should be restricted to the surgery of necessity, for the relief of obstruction, except in very favorable cases, when the disease has not yet broken through the gland capsule. In these cases radical surgery offers a good possibility for cure. The radium is usually applied through the perineum; less often by the suprapubic route. The common perineal method is to introduce the radium in the tips of long needles which are passed through the skin of the perineum into the prostate, under the guidance of a finger in the rectum. This involves little or no shock, and it may be done very quickly with novocain or the briefest gas-oxygen anesthesia. Simple as it sounds, it is a procedure of the greatest value and it is often productive of the most gratifying results. A little more elaborate technique for accomplishing the same purpose is possible in selected cases. The back of the prostate is exposed by a quick perineal dissection enabling the operator to implant radium seeds throughout the substance of the gland with the accurate guide of touch and direct vision. This may be done very satisfactorily under spinal anesthesia and like the simpler method, it produces a minimum of shock. The important fact, however, is that patients adequately treated with radium—whatever the plan of application—are living as a rule, longer and more comfortably than did those who were cared for by surgery alone.

Deep x-ray again, as in the case of the bladder, is a useful adjunct in the effort to prevent extension of carcinoma beyond the local field. It is also very helpful as a therapeutic measure for the relief of pain in those who already have developed secondary deposits in bone. The effect here is purely palliative, unfortunately, for the actual bone lesions cannot be influenced as yet, by this treatment.

In closing, and pertinent to this whole matter, may we emphasize again that blood in the urine is never normal and is never to be regarded lightly until thorough study of the patient has proved the absence of serious disease.

CARCINOMA OF THE GENITO-URINARY TRACT*

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I PLAN to speak of some of the outstanding features of the different types of malignancy of the genito-urinary tract and to call to your attention some of the points, particularly in regard to diagnosis, with the outline of how we have been treating these cases here.

In the first place, I will take up the subject of *epithelioma of the penis*. The malignant lesion that appears on the penis is practically always an epithelioma. One rarely sees a melanotic sarcoma. The latter has a very distinctive appearance, a black zone around the ulceration being very striking. As far as etiology is concerned, phimosis is apparently blameworthy. It is stated by all the writers that in races where circumcision is done in early life, carcinoma of the penis never occurs. As far as I know that is certainly true in enough cases so that it might be accepted as a general fact. The one reason why these cases are discovered so late is because the lesion is hidden by a phimosis. Consequently, in any case in which there is a discharge from beneath the prepuce, in which the foreskin cannot be retracted, and in which you can feel an induration through the prepuce, a dorsal slit should be made and the lesion exposed so that it can be examined. There is a leukoplakia of the glans penis that may arise. Wherever there is an ulcerative, indurated lesion it is either luetic, which can of course be ruled out by a Wassermann, or it is malignant; in the majority of cases it is malignant.

Some of these are of the papillary, cauliflower type, and others are ulcerations with loss of tissue. If the lesions are left alone they run a course which varies in rapidity. Some are rapidly growing and some are quite slow in growth. The latter remain as small lesions for several years and then suddenly increase in rapidity of growth. Metastases take place in the inguinal glands. This point is extremely important in planning for the treatment of these cases. I have been somewhat confused in my own mind as to just what is the best thing to do. I have dissected the groins in a number of cases and found no metastases. Some others in whom I did a partial amputation for early carcinoma got along without any metastases. Full of optimism about the situation, I saw a patient with a lesion 0.5 cm. in diameter on the glans penis. It was a perfectly typical epithelioma of the ulcerative type with, as far as I could tell by palpation, no invasion of the deeper tissues. It did not break through the tunica. Novocaine was injected under this, the needle entering the tissues of the glans penis at some distance from the growth; the growth was then destroyed by electro-coagulation. This was in January, 1928. The lesion healed promptly. The patient returned 2 or 3 times and the penis had remained healed with no palpable glands in either groin. He did not return in September as instructed but in December reported with a large, fluctuant mass in the right groin. He said he had seen no sign until about October when after a fall a lump in the groin appeared which he attributed to the fall. The fall of course had nothing to do with it. A mass of malignant glands was removed. The patient was treated with x-ray before he left the hospital but before he left he showed some nodules in the skin. He went home and returned in two months with the most distressing, extensive carcinoma that I ever saw. He was of course absolutely doomed, and died in a couple of months. Autopsy showed the growth in the glands along the iliac vessels. There were some nodules in the lungs. He died finally of a pneumonia which was a relief to everybody, himself included. That case was very instructive as well as very depressing. If I had dissected the groins at the time, it might not have happened but the chances were 19 out of 20 that one would not expect metastases. It made me feel that dissection of the groins is probably the safest thing to do in every case of epithelioma of the penis. In another case I did a partial amputation and just about one year later a gland developed in the groin which showed malignancy. I dissected the groins and the patient is doing well as far as I know. He showed no metastases two weeks ago. Although the site of the original lesion may entirely heal up you can get the metastases appearing in the adjacent lymph glands at least one year after that time. Of course the extension must have taken place before the original lesion was removed.

Carcinoma of the penis is readily accessible to examination and there is no reason why every one of these cases should not have suitable treatment earlier. It is surprising how long a patient will neglect them. I have seen cases, that have been treated with various drugs, all to no purpose. Archie C. Dean of Memorial Hospital, New York, is in favor of radium and looks upon it with far more favor as the method of treatment than we in Boston who look with more favor upon operation. He says he has good results. If I am going to destroy it locally, I would rather use electro-coagulation and then either dissect the groin or watch the patient every month so that at the first sign of enlargement of the lymphatic glands a complete dissection of both groins can be done.

*Read at the Palmer Memorial Hospital during the week of the Graduate Course in Cancer, 1929.

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Tumor of the testicle is one of the distressing types of genito-urinary malignancy with which we come in contact. These tumors are of embryonic origin and according to the type of growth which they follow, vary in their characteristics. It seems reasonable to believe that potentially they may present any type of growth. There are the different carcinomas, teratomas, sarcomas, and melanotic conditions which reproduce cartilage, bone, hair and teeth —everything but a brain. The teratomas being slower growing are probably less malignant than those of the carcinomatous or the sarcomatous type. Metastasis in these cases is very early usually and follows the spermatic cord up to the lymph glands situated along the aorta. The first place in which the metastasis is found is in the juxta-aortic glands in the upper abdomen. The diagnosis of tumor of the testicle is not always easy. Sometimes there are other possibilities which have to be ruled out. Gumma of the testicle is the most confusing. If you are to make a diagnosis in a case in which a hydrocele is present you must tap the hydrocele first, very carefully, not puncturing the testicle itself in so doing, and then the contents of the scrotum can be palpated. This should be done very gently. Tumors of the testicle show enlargement which may be smooth and symmetrical or may be pitted and somewhat irregular. If the Wassermann is negative and enlargement of the testicle is definite, investigation should take place by open operation with the idea of doing an orchidectomy, which should be performed at the external ring and the testicle removed with as little trauma as possible. The treatment of possible metastases is the important point. There are two schools. Hinman of San Francisco has recently revived the vogue of doing massive dissection of all the lymphatics back of the peritoneum, from the renal vein to the inguinal ring. We have never done it. I do not know whether I shall ever do it. The incision, after the testicle is removed, is carried over the external inguinal ring and the peritoneum is stripped inward and the fascia removed from the renal pedicle downward. In some of his cases there have been apparent cures, —patients who lived, that is, five years or more after operation. On the other hand, very good results have been obtained by radiation. The metastasis from the tumor of the testicle is usually *rich in cells and is unusually radio-sensitive.* At the Memorial Hospital in New York, where they are more enthusiastic about radiation than about operation, they have treated these cases almost entirely by radiation instead of by dissection. They radiate the tumor of the testicle itself with x-ray before operation and 4 or 5 weeks after a series of x-ray treatments they remove the testicle. Then the upper abdomen is treated and also the iliac region, both with radium pack and high frequency x-ray. The results they have obtained are very encouraging. They report some cases with palpable metastases in the upper abdomen in which the patients were well 7, 8 and 10 years after operation. This is most encouraging. If you can treat them by radiation, it is better to handle these cases in that way rather than to do a dissection, because in a certain number of cases the metastases will jump even the aortic glands and appear in the chest and the patient is therefore put through a long operation without removal of the metastases. The great thing in carcinoma of the testicle as in carcinoma of the penis, is to get it early and to get the original focus out. The patient should have x-ray whether there is any sign of metastases or not.

I have just seen a man who I thought was probably going to be all right. The testicle was removed two years ago. Recently he developed pain in the back and a palpable mass in the right upper quadrant. One x-ray treatment relieved all his pain and after a series of six, the mass had disappeared so that you could not feel it. He was quite a bit nauseated by the x-ray treatment. It took an unusual hold on him, and I hope of the tumor as well.

Renal Tumors: There are two classes of malignant disease of the kidney. One is the epithelial carcinoma which arises in the kidney pelvis and the second is hypernephroma which, according to some people, is the result of misplaced adrenal cells in the kidney. The tumor develops in the kidney cortex. As it grows it pushes into the pelvis and is covered by the mucous membrane of the pelvis. Perhaps owing to infarctions in the blood supply or to small ulcerations, this pelvic tumor will bleed in a great majority of the cases. In the case of carcinoma of the mucosa of the kidney pelvis, of course bleeding and infection are early symptoms. A painless hematuria should always suggest the possibility of renal tumor. There may be renal colic due to the passage of clots. As a rule careful palpation will show enlargement of the kidney but that may not be so. If you see a case in which you can make the diagnosis before the kidney is palpable, the situation is very encouraging. From the point of view of the man who first sees the case, the danger signal is blood in the urine. Sometimes the patient feels a tumor himself and comes to the doctor to ask what it is, or the doctor may discover it on examination. The next step of course is the determination of the point whence the bleeding comes and this is done by cystoscopy, and the diagnosis is clinched by doing a pyelogram. The only treatment for kidney tumor is nephrectomy if it can possibly be done.

A few years ago Dr. Shoemaker and I looked up these cases at the Massachusetts General Hospital. In 62 of these cases 27 had the tumor removed. In this number of operations the operation could be called worth while in nine, that is either the patient had been cured or had lived for a period of five or more years. Metas-

tases have developed as late as eight years after the primary operation. The favorite seat for metastases in hypernephroma is at the ends of the long bones. Embolic tumor cells may lie there for a number of years and then develop. There is on record the case of a man who had such a tumor develop late in his arm. His arm was amputated and he is all right as far as is known.

Treatment of these tumors: X-ray has not been very definitely established as being worth a great deal. Metastases from hypernephroma have been treated with x-ray and have been seen to diminish in size. As for treating the original tumor with x-ray it is rather uncertain as to whether or not it is worth while. At the Massachusetts General Hospital they feel that it is not. On the other hand, Francis C. Wood in the *American Medical Association Journal*, speaking of radiation in general, says that x-ray is of some value in hypernephroma.

Tumors of the ureter are rather rare. Diagnosis depends upon cystoscopic evidence. In the bladder we have from the clinical point of view two types of growth. One is the papillary growth, non-invasive. This is where the growth has not extended to the pedicle and the bladder wall; the management of these is quite different from the management of the invasive tumors which may have started as papillary tumors and then invaded the bladder wall or may have originated under the mucous membrane and spread beneath the surface of the bladder. Bladder tumors of the papillary type may be entirely benign, although there is always the possibility that they will recur as malignant conditions. I am firmly convinced of this as I have treated these cases for ten or more years and have seen them to be clinically benign at the start and yet recur later as malignant tumors. Some writers say they are always benign or malignant from the start, but the majority think that they may assume the character of malignancy over a course of years.

The outstanding symptom of all tumors is hematuria, usually painless. The diagnosis should be made certain by cystoscopy. Sometimes the symptoms of cystitis may be the prominent symptoms in a case, when a tumor does not bleed but when infection has taken place. The smaller tumors of this papillary type are treated very successfully by destruction by electro-coagulation (the use of diathermy), through the cystoscope. Formerly we used the unipolar current but the recently developed bipolar apparatus is much more satisfactory. Quite a considerable number of the tumors that do not invade the bladder wall can be destroyed in this way, through the cystoscope. The best thing to do is to anesthetize the patient with sacral or spinal anesthesia and make one session of it, destroying the growth as much as possible at one sitting. This is far better than taking a little out at a time. If the above procedure is not sufficient the bladder can be opened, the growth destroyed, and the burned tissue curetted off until you get down to the tissue that is not friable. Then destroy as much as you dare and allow it to heal. Give thorough bladder drainage after this operation as there is a great deal of slough and infection present and the patient is more comfortable with free drainage. The use of radium in tumors of the bladder I think is still in a state of flux. We started out using it a great deal but I think the general feeling throughout the country now is turning away to a considerable degree from the use of radium in the bladder. The difficulty is that radium, no matter if you use it in gold seeds or glass, will cause considerable local sloughing and in addition will cause devitalization of the surrounding normal tissue. The surrounding tissues will be so devitalized that the ulceration will remain for months and sometimes for a year.

If you use radium around the trigone you get slough, edema about the mouths of the ureters, and probably infection extending up the lymphatics of the ureters to the kidney pelvis, and the patient will probably get a pyelonephritis which will give him much trouble. I for one am extremely loath to use radium about the trigone.

The most definite indication for the use of radium in the bladder is in sessile carcinoma, where the growth is well under the surface and nothing else can be done. Excision of course is the method of choice if it can be done. I do not believe in excising a large portion of the bladder wall for papilloma because you may have recurrence in a part of the bladder other than the area where the original growth was situated. If the growth is of the ulcerative type, invading the bladder wall, as evidenced by a thick pedicle or by induration, excision of that area is advisable. If it cannot be done, use electro-coagulation. If it is more widely extended than you dare to burn, use radium, but in so doing have a clear idea of the unpleasant consequences and do not do it unless you feel that by so doing there is quite a fair chance of curing the patient of the condition. Do not do it as a sop to your conscience, because if it does not cure the patient it will make him most uncomfortable without curbing the course of the disease. A few cases of carcinoma of the bladder are so widespread that it is obvious that no local treatment will be of any use or the disease will progress in such a way that the patient will continue to suffer a great deal. Then the question comes up as to whether it is worth while to do a uretero-enterostomy. This operation is one that Coffey of Portland, Oregon, has developed in a most creditable way, which he reports having done successfully in nine consecutive cases. It is a most difficult operation to do. I have done it quite a few times and I am sorry to say that my results are not so successful as his, partially because some of the

cases in which I operated were not at all good operative risks and the general condition of the patients was not good enough to carry them through. I think if this operation is to be done it should be done fairly early before the patient is in a depleted condition. I had one man who was alive and very well for two years following operation and then developed metastases in the lung. Another lived a year comfortably, was able to play golf as usual and then developed recurrence locally. It is an operation that will give relief and the patient is very comfortable so far as holding his urine is concerned. The surgical aspect of the case should be very encouraging before attempting it.

The last type of case in this series is carcinoma of the prostate. Cases with practically complete retention have been made to void and in many instances have been able to empty the bladder completely when the obstructing median bar at the bladder neck has been removed. Improvement in the urinary drainage is important; the combination of that and x-ray improves some of these people in a perfectly extraordinary way.

Of course the important diagnostic point in carcinoma of the prostate is the hard feeling of the gland on rectal palpation. Every man of 50 or more who comes in for examination should have a rectal palpation done. The disease begins in at least 80% of the cases in the posterior lobe of the prostate. As your finger goes by the anal sphincter the first portion of the prostate you feel is the posterior lobe; in carcinoma that lobe is pushed towards you and is hard and the distance between the prostate and anal sphincter is decreased. The induration may extend downwards to the perineal diaphragm. In total prostatectomy, after the prostate is removed, the bladder neck is brought down and sutured to the stump of the urethra just inside the external sphincter. It is a fact that very satisfactory urinary control can be obtained in this way. I have done about 25 such operations and at least 8 out of 10 obtain good urinary control. It is a very satisfactory operation for early carcinoma of the prostate. The carcinoma of the prostate begins, as I have already stated, in the posterior lobe, is confined between the fascia and the urethra, and then grows up along the vesicles and emerges on to the trigone of the bladder. I always cystoscope these patients and try to make up my mind whether the prostate is removable or not.

Prostatic carcinoma is divided into three classes. The first, absolutely inoperable cases. The second, moderately advanced cases where by x-ray and punching out the bladder neck you can give relief for 1 or 2 years. The third, early cases in which total perineal prostatectomy can be done.

The most discouraging feature of prostatic carcinoma is of course the tendency to metastasize to the bones, especially in the spine. When this occurs, needless to say, cure is out of the question. In many cases however, x-ray treatment relieves to a considerable degree the pain due to spinal metastases. The patient's comfort can also be promoted by suitable palliative procedures to relieve the local condition of obstruction and infection.

CLINIC ON MALIGNANT DISEASE OF THE GENITO-URINARY ORGANS*

Tumors of the Prostate

WILLIAM C. QUINBY, M.D.†

TUMORS OF THE PROSTATE

THE patient, a man sixty-two years of age, entered the hospital a week ago. His family history and previous history are negative.

In 1924, that is, five years ago, he was told he had an enlarged prostate. The reason why he consulted a doctor was because he had urgency and frequency of urination. His symptoms cleared up somewhat and nothing further was done, but in November 1928, last fall, he again went to a doctor, this time there being a considerable amount of infection in the urine. The doctor gave him treatment for cystitis.

In January 1929, besides the difficulties on the part of the bladder, he began to have pain in the lower part of his back. It gradually became worse and extended downward into his legs, especially into the hips. It was intermittent, and later it became worse on lying down than at any other time. The bladder difficulty with which his illness began, is now less important from his point of view than the pain in his back and in the legs. This has become so severe that he was compelled to enter the hospital.

On examination of the urine it is found to contain many red and white blood cells. There is a slight trace of albumen; no sugar. His general physical condition is good; his red blood count is normal; there is no leucocytosis. His renal function is within normal limits, his Wassermann negative, and he has no fever.

On physical examination there is nothing to see or to palpate in the region of his back except spasm of the erector spinae group of muscles.

That is not at all an atypical history. In fact, it has many of the aspects of a text-book history. Only one thing is necessary to complete the picture in my presentation of it, namely to tell you that on examination of the prostate by rectum, the gland is not only enlarged but is hard and

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irregular, and this irregularity extends upward, especially toward the left seminal vesicle. One must be very suspicious of malignancy in any man who comes with a story of having had difficulty on the part of the bladder, to which there has been added pain in the back, and pain down the legs. It is almost invariably due to involvement of the nerve trunks where they emerge from the muscles of the lumbar spine by carcinoma primary in the prostate; the pain being a referred one. The prostatic disease may have started as a benign enlargement or it may not have, but in any event, becoming carcinomatous the carcinoma spreads by way of the lymphatics upward toward the promontory of the sacrum and the iliac lymph nodes at the bifurcation of the large vessels.

One patient out of every five who complains of symptoms of enlargement of the prostate is found to have carcinoma. That one fact in itself makes it imperative for us, as physicians, to investigate at the earliest possible moment every man who complains of urinary difficulty. The cured cases of carcinoma of the prostate are cases in which there was a prostatectomy done on account of benign hypertrophy, and after the gland had been removed, some small area of beginning malignancy was found on pathological examination. Clinically, the only types of prostatic carcinoma which are diagnosed before operation which can be cured are those in which one finds the gland only in the beginning of the carcinomatous process and small enough so that it can be entirely excised.

We will consider next the way in which carcinoma behaves and the types of histology one sees.

As a rule, carcinoma of the prostate is adenocarcinoma, but it has characteristics which make it differ from other types of malignancy. It is frequently an accompaniment of a benign hypertrophy, that is, the gland becomes enlarged and that enlargement is for the greater part due to a condition which is entirely benign. In certain areas, however, the cells take on activity in the way of increased growth and the incidence of malignancy in a previously benign gland is a frequent observation.

Prostatic carcinoma is propagated upward by the lymphatics. There is a dense layer of fascia posterior to the prostate and in front of the rectum so that carcinoma beginning in the posterior part of the gland, its usual site, does not invade the rectum easily but is propagated upward behind the bladder towards the promontory of the sacrum, filling the space between the two seminal vesicles. Prostatic carcinoma grows slowly, as a rule. It is not at all uncommon for a prostatic carcinoma to involve bone, especially the pelvis and spine, and when this takes place one very frequently finds that instead of eroding and causing large holes in the bone, such as virulent breast cancer or a kidney cancer frequently does, the prostatic cancer cell apparently grows slowly enough so that the bone reacts to the presence of the cell by an overgrowth. One then sees a peculiar x-ray picture of new bone formation combined with bone destruction, causing a typical "fuzzy" picture. To go back to our patient for just a moment, you have the typical history, you have the urinalysis, and you have this x-ray film. All through the pelvis, the right os innominatum, and the lumbar vertebrae, you see a mottled condition of the bone. On analysis you will see that there are areas of bone which are denser than they normally should be. In other words, there is an overgrowth as well as bone destruction. The diagnosis of cancer of the prostate with extension to the pelvis and spine is clear.

What can we do for this chap? The problem is a grave one. It can be arranged that he empty his bladder. As a matter of fact, on cystoscopy he has not very much prostatic enlargement. A punch instrument passed through the urethra will probably relieve the outlet of his bladder quite sufficiently to do away with any worry as regards retention of urine. But what is one going to do about the outstanding symptom, that is, severe, crippling pain in the back? The only thing I can think of for this type of patient is a chordotomy. I think in these cases of malignancy, one has to look at the situation from all angles, one of which is the probable rate of growth. In other words, how much must we expect him to have to go through; or how fast will he go downhill? He is a pretty healthy chap. If he were freed from pain, his bladder difficulties are not insurmountable at all. I should suggest that under ordinary circumstances he might live for another two years, probably longer. Therefore, I fully believe that a chordotomy, that is an operation which cuts the sensory tracts in the spinal cord and eliminates the possibility of any pain sensation reaching the brain, is the best treatment for this type of patient.

You will probably all think, "Why not give heavy doses of x-ray?" In my experience it has but little effect on this type of malignancy. Most of the pain is due to malignancy in areas that cannot be very well controlled by deep x-ray; it is in the bone and nerve trunks and moreover it is a type of cellular growth that does not respond very well to x-ray. My suggestion for him is that he have the pain tracts in the cord severed so that he will no longer perceive pain. He may then be able to get about. This operation does not interfere with the motor tracts of the cord so that motion is retained with entire loss of sensation. For cases of carcinoma of the prostate where one finds that there is no involvement of the bone, one can do much more, and one can do more, of course, as for carcinoma in any location, the earlier the disease is found. If one can make the diagnosis of prostatic carcinoma before any enlargement has taken place and there is no

evidence of upward propagation of the growth. then the prostate should be taken out as a whole by complete prostatectomy.

On rectal examination one should especially feel for any induration of the area between the two seminal vesicles. If that region is normal, there is no reason why the prostate may not be totally removed. Unfortunately, we find that patients frequently do not have symptoms until the disease has progressed beyond this area. In such cases my feeling is that a total excision is a foolish procedure, because there will inevitably be a good deal of malignancy left.

The treatment of prostatic carcinoma with radium is a long subject; one with which we have some familiarity, but not nearly as much as others. I will simply tell you that my feeling is that cancer beyond the prostate itself should be treated by radium. The obstruction at the outlet of the bladder should be relieved by operation without any attempt being made to enucleate the carcinoma entirely. It is then possible to treat the carcinoma which must inevitably remain, with radium.

So much for the subject of carcinoma of the prostate, the outstanding points about it being its frequency, the importance of its early diagnosis, its method of extension, the necessity for relieving obstruction at the neck of the bladder even though you cannot get all the carcinoma, and my own personal opinion that when excision is not possible, the only remaining treatment is by the use of the radium. In cases where one gets extensive bony involvement, as in this patient whom you have just seen, some further operation as chordotomy may be necessary.

TUMORS OF THE BLADDER

Tumors of the bladder are of two sorts, the benign papillomatous type of tumor, and the malignant type. There are differentiations between the two types but there is no use to bother about them clinically.

The benign papilloma of the bladder is a very common affair and simple, if recognized and treated. A warty papillomatous growth appears in the bladder, of cauliflower type, on a stalk. The symptoms of a growth of this type are only hematuria, and frequently very little of that, until there has been a considerable size attained. There is no pain connected with it unless infection happens to supervene, and the bearer of the papilloma is quite ignorant of the fact until he finds himself passing bloody urine. One looks into the bladder with the cystoscope and sees a growth arising usually from the lower segment of the bladder. There is a predilection for these tumors to take place in the region of the bladder outlet, that is, from the trigone downward to the sphincter region. Though benign at first, these tumors are potentially malignant, and if allowed to remain in the bladder long enough, some one of these papillomata takes on an invasive type of growth becoming papillary carcinoma and then later definite carcinoma. At that time, of course, the disease will have invaded the wall of the bladder, spreading out under the mucous membrane. So that, even though, literally speaking, the papilloma is benign, it nevertheless is a growth which must be watched carefully and all recurrences eradicated by the electric spark so soon as they appear.

The other type of growth common to the bladder is that type which takes origin in the wall of the organ without any pedicle—a sessile growth, usually rapidly invasive and gradually heaping up the mucous membrane, with sometimes early ulcerations and thickening of the whole bladder wall. This may occur anywhere in the bladder, but the invasive tumors as well as the benign are prone to be found in the lower bladder segment rather than in the dome.

These being the two types of tumor common in the bladder, what are the symptoms?

As a rule, the first symptom is spontaneous, painless hematuria. That may be mixed entirely with the urine, the whole urine being bloody or, in the case of some of these papillomata, if they are situated near the outlet of the bladder, they may not bleed until just as the bladder empties itself entirely, when the muscular contraction causes enough pressure to make the bleeding come at that time. Under these circumstances one finds the so-called terminal hematuria. As a rule, however, the blood is mixed entirely with the urine and the hematuria is said to be total. Painless, spontaneous, total hematuria can occur under many circumstances other than those caused by bladder neoplasm. Bleeding may come from the kidney, or it may come from lower than the bladder.

It is perfectly true that an individual who has a total hematuria may have a transient renal disease, such as a slight degree of pyelitis or something of that sort. The bleeding may be due to many causes but the point is, there are so many of these cases which are due to malignancy or other pathology which needs early correction that the first spontaneous bleeding of that sort should be a reason for immediate investigation. The clinical picture of this type of case is as follows:

A patient complained eight weeks ago of nocturia. He was fifty-nine years old and the nocturia was accompanied by occasional hematuria. During the last couple of weeks the hematuria became more pronounced and more severe. He was an intelligent chap, he had been accustomed to doctors, so when he noticed the bleeding, after a couple of months of having to rise to urinate, he came here promptly for investigation. On examining him we found blood in the urine, normal renal function, and he had not lost weight. We made an examination of his bladder by filling it with an opaque substance and taking an X-ray of it. One does not always need a cystoscope to make a diagnosis; and in this case we found on looking at the bladder film a normal looking bladder outline with a little fuzziness on the top, as though in that area there had been some herniations through

the mucous membrane or little cellules that one gets in the bladder of a person who has more obstruction at the outlet than he ought to have. The important finding is a shadow, caused by an area in which the opaque medium, that is, the sodium iodide solution which was put into the bladder, is less dense than elsewhere. Confirmation was immediately made by the observation of a large carcinoma in the floor of the bladder, by cystoscope. The pathologist reported that it was a carcinoma, rapidly growing.

Here we have the problem of malignancy of the bladder which needs excision or needs radical treatment. The treatment of a papilloma is simple. One adjusts to the cystoscope an electric current just like the cauterizing needle, and cauterizes the growth through the cystoscope—so-called diathermy or fulguration. Benign papilloma is very easily destroyed by coagulation through the cystoscope, always, of course, provided it is in the region of the bladder which one can reach. If it is on the front wall of the bladder, the bladder may have to be opened, but as a rule it is easily reached.

In malignant cases, one is met by the question of where exactly in the bladder the growth lies. The propensity for malignant disease to be situated more commonly in the floor of the bladder than anywhere else is a very unfortunate thing because frequently, if one tries to remove all of the tumor, one must inevitably destroy the closing and opening mechanism of the bladder, and convert the bladder into a practically functionless organ, a mere reservoir with no sphincter control. Similarly also it involves the ureteral orifice and sometimes the ureter must be transected and reimplanted into the bladder in another region. Those cases of bladder malignancy in which the excision has necessitated reimplantation of the ureter, into another portion of the bladder, have not done well as a rule. The inability to make a new ureterovesical valve on the transplanted side has led to early damage of the kidney above the transplanted ureter. So, I think again, in regard to these poorly situated bladder carcinomata, operation should give place to treatment by radium. In institutions such as the Memorial Hospital in New York, where they work only with this type of patient, they find that with bladder carcinomata fifteen to twenty per cent. are "radium sensitive". In other words, there is something like eighty per cent. of cases whose tumors will not be very favorably influenced by radium. That is a large percentage and the outlook of tumor of the bladder is, of course, gloomy. So important is this that we have adopted the opinion, in recent years, that in cases of neoplasm where there is no evidence of malignancy outside the bladder and in which the tumor is definitely in an area which cannot be excised without destroying the bladder, a total excision of the bladder is a justifiable procedure. We have done one or two here with some success; Dr. Smith at the Huntington Hospital and Palmer Memorial Hospital has probably done more than we have, that is, total excision of the bladder and implantation of the ureters into the bowel. It is a pretty big order but Coffey has helped a good deal in his work on transplantation of the ureters and I personally feel that unless radium will eventually be seen to have more effect on these tumors than it has at present, a total excision of the bladder is the best procedure to advise the patient to have.

TUMORS OF THE KIDNEY

Malignant neoplasms of the kidney form a very important group of cases which I would like to illustrate to you in one or two respects. The signs, clinically, of a renal neoplasm are supposed to be three; (1) a tumor, (2) pain and (3) hematuria. These three things all occurring together are quite sufficient for diagnosis of neoplasm. But today one should be able to make the diagnosis from any one of these symptoms. Here again I wish to repeat and emphasize the importance of *immediate investigation of any abnormal bleeding*, because very frequently the patient with a renal tumor will come to you saying that he or she has had a painless, spontaneous hematuria. This should call for immediate investigation. I have here a clinical history which I shall go over in brief with you, illustrating what happens if that procedure is not carried out.

A girl of nineteen came complaining of a large tumor in her loin and hematuria from time to time for about four years. She bled occasionally from time to time, not to any severe degree, and she came into the hospital in February because of pain in her abdomen. On investigation the whole left side of the abdomen was found filled by a solid mass which on x-ray and cystoscopic examination gave a perfectly classical picture of tumor. It was obvious that she had a malignant tumor of the kidney. Why operate at all, when the situation has gotten so advanced as that? Because one of the largest renal tumors that has been removed in this hospital was a benign adenoma. Any renal tumor may be benign. At operation, in dissecting to reach the vascular pedicle of the kidney, there was found a small area of metastasis and on examining that small nodule of metastasis under the microscope, it was evidently malignant so there was no sense in trying to go further.

Summing up the question of renal tumors, then, I should like to leave with you this suggestion that all hematurias should be immediately investigated; that the diagnosis of renal tumor should be possible on any one of what we used to call the triad of symptoms, pain, hematuria and tumor; and that no renal tumor, from a surgical standpoint, is so large as to be inoperable, at least from the point of view of exploratory operation. Every tumor should be investigated, because even some of the larger ones may be benign. The most common tumor is hypernephroma, which makes metastases into the veins and is a very actively growing, malignant tumor. Three or four years ago, in going over the tumors of the kidney which we had had in this hospital, we found that there were still

living, nine or ten patients out of possibly sixty, and I have one very striking instance of a recovery and permanent cure so far as one can see, after excision of such a tumor. It was removed at least eleven years ago from a woman who is absolutely well today. It was a malignant hypernephroma. So you can never say what the outlook is going to be, and you must only keep on striving.

Hypernephroma is very resistant to the x-ray and I have had no success in trying to control metastases by the exposure to x-ray and, of course, on account of the bulk of the thing it is almost impossible to handle it by radium so that any other treatment than operation is relatively futile.

Tumors of the testicle should next be mentioned. They are usually found in an earlier stage than a good many other tumors, because of the external position of the gonad. It is noted early if there is any difficulty on the part of the testicle either because of pain or increase in size. The tumors themselves are of various sorts and there is a very highly malignant tumor of the testicle, the so-called embryoma-type of tumor which one sees more especially in young adult men. Not at all infrequently, one finds a chap of college age with a story that either with or without trauma the testicle began to enlarge. There is no especial pain experienced until it reaches twice the original size when there may be a dragging feeling on account of the weight. As a rule, that type of tumor, occurring in an individual of that age is very malignant and in more instances than not metastases to some other portion of the body have taken place before surgical advice is taken.

The problem for the surgeon is this. Whether a simple orchidectomy will be sufficient, or whether it will be necessary or advisable to dissect out the lymph-bearing channels from the testicle upward. The testicle and ovary are developed high, just at the level of the kidney, and descend, so that if one is to excise the lymph-bearing area of the testicle it means open dissection from testis to renal pedicle. Under most circumstances this is not advisable. Fortunately, however, the cells composing testicular tumors are very responsive to destruction by the x-ray. Therefore, the best treatment at present of all tumors of the testis is early orchidectomy followed by several courses of deep x-ray applied to the abdomen on the side from which the tumor was removed and extending as high as the kidney.

THE DIAGNOSIS AND TREATMENT OF MALIGNANT LYMPHOMA*

HENRY JACKSON, JR., M.D.†

THE general term malignant lymphoma is here used to cover a rather large group of conditions characterized by localized or generalized lymph-adenopathy, often with involvement of internal organs and leading eventually to death in practically all instances. Hodgkin's disease, lymphosarcoma, and lymphoblastoma are included under this general heading. The leukemias — particularly lymphatic leukemia— are closely allied. The exact nature, pathogenisis and etiology of these conditions is uncertain. In many respects, however, they behave as neoplastic diseases. Malignant lymphoma is often overlooked or disregarded especially in its early stages, both by the laity and the profession; yet much can be done for these patients if proper treatment is promptly instituted.

The classical picture is that of progressive painless enlargement of the lymph nodes in the neck, axillae or groin, with subsequent loss of weight, asthenia, anemia and death. Fever and leucocytosis may be present, particularly in fulminating cases or in the terminal stage of chronic cases. This picture is familiar to all. Less well known, however, are those cases of malignant lymphoma in which enlarged external nodes are not prominent or are actually absent and in which the symptoms are referred to some other system. Few diseases give a more varied clinical picture. In some—particularly of the Hodgkin's type—skin lesions of the most varied sort are common, and they may be the presenting symptom. Generalized itching is not rare and may first bring the patient to the doctor. Mediastinal growths—often without superficial lymph-adenopathy—are insidious in their onset and without X-ray aid may be difficult to diagnose, yet they respond remarkably in most instances to proper radiation. Dyspnea, dysphagia, hoarseness, cough, cyanosis, pain or enlarged superficial chest veins may be found as symptoms. Rarely the tumor may press through the ribs or sternum and so simulate an aneurysm—as in the case of a civil engineer under our care at present. Intestinal lymphoma is not infrequent and I have recently seen two cases in which the presenting symptom was obstinate constipation, and another originally diagnosed as carcinoma of the rectum. Protracted diarrhea may be a symptom. Bone lesions are not rare. A recent case was that of a young boy treated for months for a "sprained knee", while all the time he had a lymphomatous infiltration of the femur which responded well

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to X-ray therapy. Involvement of the parenchyma of the lung may give a confusing picture. A young girl in the hospital at present was diagnosed as tuberculous by a most excellent clinician. She really has Hodgkin's disease infiltrating the left lung and is at present improving under treatment. Low backache, pain of the "sacro-iliac type", enlargement of the tonsil, abdominal pain, pleural effusion—all may be due to malignant lymphoma. A particularly treacherous group, insofar as diagnosis is concerned, is that in which the patients complain merely of abnormal fatigue—one of the most common symptoms of leukemia, incidentally. Cord tumor has been simulated—and operated on—more than once. One man of 50 years had a massive hematemesis and was wrongly diagnosed, by myself, as cirrhosis of the liver. He proved to have a lymphoma. The signs and symptoms, in short, are legion.

The diagnoses: tuberculosis of the lymph glands, metastatic cancer, benign chronic inflammation, are the chief lymph node diseases to be ruled out. The varied symptomatology which may occur should recall the condition to mind in any obscure case. In the short time at our disposal the differential points can scarcely be touched upon. The feel of the glands, the distribution, the duration, the basal metabolism and the white count are all of help. But biopsy is, so far as I know, the only sure way of making a correct diagnosis and a correct diagnosis is of prime importance in making a prognosis and in giving treatment. I have never yet seen the clean excision of an isolated lymph node cause any trouble. The tissue, however, to be of real value, must be freshly fixed and properly prepared by an expert pathologist. Better still, the case may be referred directly before biopsy to one of the large hospitals specializing in the treatment of such conditions.

The treatment: To date the only treatment of real value is X-ray or radium. In the hands of those familiar with the disease, excellent results are obtained. Inexpert handling of the case only makes subsequent treatment more difficult. Some cases, it is true, respond but poorly; others are entirely relieved of their symptoms and may live for ten years or more in comparative comfort. It is a disputed point whether or not life is actually prolonged by radiation. Common sense and statistics may not agree. But there is no question but that patients are relieved temporarily of their symptoms and may go back for a long time to their work, whereas the disease had forced them to give up before treatment. An occasional case has been reported cured. I have seen two cases free from signs or symptoms after fifteen years. Here we do not radiate patients over areas not obviously involved. We do not treat except to reduce masses or alleviate symptoms. We also believe that high voltage treatment, if properly handled, is of more value than low voltage.

There are certain well-known contraindications to intensive treatment. Large mediastinal masses should not be reduced too rapidly. An anemia of considerable extent calls for caution in therapy, as does a low white count, particularly with a low lymphocyte per cent., and signs of bleeding from skin of mucous membranes. In addition to X-ray therapy the usual supportive and symptomatic treatment should of course be given. A liberal, well rounded diet with plenty of fresh air, sunlight, and rest is essential.

The prognosis. The average case lives but a few years. Some die in a few weeks or a few months. Many live several years, a few live many years. An occasional cure has been reported but such should be regarded with suspicion. Many factors with which we are not at present entirely familiar, undoubtedly enter into the prognosis. Only intensive study will tell what these factors are. But treatment is called for in all—even the sickest. One child under our care we have given up three times in the past two years but she is still with us and enjoying herself.

In short, malignant lymphoma is a disease often overlooked, particularly in its incipiency, one which gives, or may give, the most varied symptomatology and which may be materially helped by proper treatment.

IRRADIATION TREATMENT OF MALIGNANCY*

RICHARD DRESSER, M.D.†

IT is the purpose of this paper to present a brief resume of the present status of irradiation in the treatment of the more common types of malignant disease. Three main groups will be considered.

Group 1. Those cases in which a cure may be effected by irradiation alone.

Group 2. Cases in which irradiation is employed as a palliative or preventive measure.

Group 3. Those cases which are not suitable for irradiation.

Group 1

Most cases of cancer of the skin respond readily to irradiation, and a large percentage of cases may be permanently cured by this form of treatment alone. The cosmetic results obtained by irradiation are, in the main, better

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than those following surgical removal. This is an important factor, since most epitheliomas occur on the face. The selection of the proper dosage is important. At least five times the skin erythema dose should be given, and it is often justifiable to give ten times the erythema dose. These lesions will frequently disappear with much smaller doses, but the results will not be permanent. Repeated small doses eventually render the tumor radio-resistant, and it must then be removed by some surgical procedure. Epitheliomas which involve cartilage, and those which are situated close to the canthus of the eye should, as a rule, be removed surgically. It has been our experience that the results obtained by Roentgen irradiation are somewhat better than those obtained by radium.

Cancer of the cervix uteri. In the so-called operable group, the results obtained by irradiation are fully as good as the surgical results. In the inoperable group, unexpected cures are not infrequent and remarkable palliative results, extending over a period of months or even years, may often follow proper irradiation. An adequate amount of radium should be applied by an experienced gynecologist. Much harm may be done by inexperienced operators, working with an insufficient supply of radium. High voltage Roentgen rays may be combined with radium in the treatment of advanced cases.

Cancer of the lip. The local lesion may be destroyed as completely and effectively by radium as by surgical removal, and with much less sacrifice of normal tissue. Surgical procedure, however, affords a specimen for microscopic examination which, as has been shown by Simmons and Daland, is of the utmost importance in determining the prognosis of the disease. Glandular metastases must be dealt with surgically, or by a combination of surgery and irradiation.

Group 2

Cancer of the breast. If the disease is sufficiently localized it should always be removed surgically. It is important that a thorough search for metastases be made before operating on the patient. This should include Roentgenograms of the lungs, spine, pelvis, and skull. Metastases in these areas will often be discovered when they are least suspected. We have had little success with preoperative irradiation, although it is still strongly recommended in some clinics. Postoperative irradiation should be limited to those cases in which surgical removal has been incomplete, or where there is a very high degree of malignancy as shown by microscopic examination.

Inoperable cancer of the breast, and post-operative recurrences form one of the largest groups of malignancy with which the radio-therapist has to deal. Much can be expected in the way of palliation, but almost nothing in the way of permanent cure. Skin recurrences may be made to disappear completely; foul, ulcerated areas may be dried up; the pain of bone metastases may be greatly alleviated, but the patient eventually succumbs to the disease.

Carcinoma of the mouth and pharynx. In advanced cases, some palliation may be expected from the local application of filtered radium, together with high voltage Roentgen irradiation. The end results, however, are uniformly bad.

Carcinoma of the prostate. Remarkable palliative, and occasionally curative results may be obtained by radium in the hands of a skillful operator. The severe pain occasioned by spinal and pelvic metastases can be relieved by Roentgen irradiation.

Carcinoma of the bladder. The local implantation of radium has proved rather unsatisfactory. The pain and bleeding in advanced cases may be temporarily relieved by Roentgen ray treatment.

Carcinoma of the ovary. Some cases do remarkably well under high voltage irradiation. Meigs has observed cures in advanced cases which were first irradiated, and then operated upon.

Lymphoblastoma (Hodgkin's Disease, Lymphosarcoma, Malignant Lymphoma). It is in this type of case that the most brilliant palliative results may be obtained by irradiation. It is usually possible to render the patient symptom-free for a period of from two to five years, and occasionally for a much longer time. These neoplasms are very susceptible and must be carefully treated. Death may result from too heavy irradiation.

The chronic leukemias, especially the myeloid forms, respond in much the same manner as do the lymphoblastomas. Acute leukemias should not be treated.

Carcinoma of the esophagus. The implantation of radium may temporarily relieve the obstruction, but there is great danger of ulceration and perforation, with a resulting fatal mediastinitis. High voltage irradiation has proved of little or no value.

Group 3

Carcinoma of the stomach should not be treated. Any dosage likely to affect the growth will produce grave injury to the very susceptible intestinal mucosa.

Moderate doses of high voltage Roentgen rays will occasionally lessen the pain and bleeding of cancer of the colon, but great care must be taken not to injure the normal intestine.

The obstruction resulting from carcinoma of the rectum may be relieved by the local application of radium, but in general, irradiation is of little value.

Cancer of the body of the uterus is highly resistant, and should always be treated surgically.

Melanotic sarcoma does not respond to either

Roentgen rays or radium. It is useless to treat it.

Fibrosarcoma falls in this same category.

In treating a case of malignancy which presents some hope of permanent cure, we are justified in the most radical measures. The reverse, however, is true in advanced cases, and we must exercise the greatest care in our therapeutic procedures that we do not add to the sufferings of these unfortunates.

THE TREATMENT OF PAIN IN CANCER*

JOHN S. HODGSON, M.D.†

THE relief from pain due to primary and metastatic cancer forms one of our urgent and difficult problems at Pondville. Pain of slight or moderate degree may be controlled by drugs, but if severe or protracted it calls for surgical measures. Trethylene has been used in cases of fifth nerve pain, with somewhat indifferent success, but with definite relief at times. Surgical measures include alcohol injections, spinal and cranial nerve sections, and partial cord sections. Alcohol injection of the second and third divisions of the trigeminal nerve at their exits from the cranial foramina or more peripherally is frequently performed. This procedure is simple and satisfactory but may be complicated or precluded by the presence of disease. Under these conditions intracranial operation with either section of anterior divisions or avulsion of the sensory portion of the posterior root of the fifth nerve may be performed, with complete relief. There may, however, be residual pain, due to involvement of other cranial nerves, as the ninth or tenth, or of upper spinal or cervical nerves.

The problem involved in the treatment of pain in the tongue, throat, and pharynx-areas supplied by ninth and tenth cranial nerves——is more complex. Decision as to nerves implicated is difficult, and surgical approach even more so. Direct peripheral nerve section is usually impossible because of obstructive growth. Intracranial nerve section has therefore been advocated and performed, with relief. Such surgery is admittedly formidable, and must be used selectively. The existence of growth in the neck is common, and the pain is the result of irritation of upper cervical nerves. Alcohol injection of the upper cervical nerves by the lateral or dorsal route may be used. If, however, the growth is extensive, laminectomy of the first three or four cervical vertebrae and intradural section of the upper three posterior cervical roots is indicated.

Metastatic cancer in the supraclavicular and axillary regions, as from primary cancer of the breast, with pain in the arm, forms another group difficult of relief from pain except by laminectomy and section of lower posterior cervical roots, with resulting loss of sensation in arm and hand.

Malignant disease of abdominal or pelvic viscera — intestines, retroperitoneal regions, uterus, cervix, prostate, spine and lower extremities may result in intense intractable pain. Relief may be afforded by section of the pain fibers in the spinal cord. The operation, termed chordotomy, consists in laminectomy of two or three vertebrae in the upper dorsal region and section of the antero-lateral columns of the cord. As knowledge of the existence and value of this operation is appreciated, it is likely to have an increasing application.

*Read at the Pondville Hospital during the week of the Graduate Course in Cancer, 1929.

†Hodgson—Surgeon to out-patient department, Massachusetts General Hospital. For record and address of author see "This Week's Issue," page 1316.

"MODERN CANCER THERAPY: A RESUME"*

ROBERT B. GREENOUGH, M.D.†

AS a result of the intensive study of cancer which has been going on all over the world in special cancer hospitals and research institutes during the past ten years, the treatment of cancer has been refined and developed to an extent that is perhaps not generally appreciated by members of the medical profession who have not kept closely in touch with this special line of work.

These improvements in the treatment of cancer, moreover, have resulted not from any one epoch-making discovery in regard to the cause of cancer (unfortunately, no such discovery has yet been made); but rather by the better utilization and co-ördination of methods of treatment already known to us, combined with a more intelligent application of those methods in the light of the advances in the knowledge of the disease which have been made during this period, and by a close and co-ördinated application of the group consultation method of dealing with the disease. The treatment of cancer is admittedly no longer a "one man job", and the marked improvements in treatment have resulted chiefly from the organization of groups of physicians and scientists . . . each compe-

*Read at the Boston City Club during the week of the Graduate Course in Cancer, 1929.

†Greenough—Visiting Surgeon, Massachusetts General Hospital. For record and address of author see "This Week's Issue," page 1316.

tent in his own field; but working in consultation with free and frank discussion, to determine the methods best adapted to achieve the desired result in the individual case. This is the chief factor in the development of cancer therapy in recent years, and as this principle is further accepted, and more and more such groups of cancer workers are organized still further developments and refinements of treatment may confidently be expected with a corresponding increased efficiency, and a resulting diminution in the mortality of this disease. In spite of world-wide investigations, no parasitic cause for cancer has yet been demonstrated, and although many cling to the belief that some new and unusual form of infectious agent may yet be found, the general trend of scientific opinion seems to be, at present, quite in the other direction, and cancer is believed to be a peculiar process of growth of the body tissues due perhaps to any one of a number of different agents (physical, chemical, or biological)—but resembling more closely the normal processes of cell-growth, than the reaction to an infectious agent.

Lacking a specific parasitic cause, we lack also the specific diagnostic and therapeutic measures associated with such a specific agent, which have proved so effective in the diagnosis and treatment of the infectious diseases, and for the cure of cancer we have recourse chiefly to the more crude local methods of surgery and radiation, to eradicate the disease.

The exact details of the change which takes place when a normal cell becomes a cancer cell are by no means known to us, but certain features of this change are well established—notably, that the cancer cell acquires an enhanced power of growth, and suffers at the same time a loss in the power of differentiation for the purpose for which it was originally developed. These changes are of the greatest importance in determining the malignancy of a given tumor and a great step in advance in our knowledge of cancer has resulted from the work of Broders and others in classifying the varying degrees of malignancy of tumors by a study of those characteristics.

With these changes in the rapidity of growth and in the degree of differentiation of the cancer cell, there goes hand in hand in many cases at least, an increased sensitiveness to physical or chemical damage, due perhaps in part at least to the altered metabolism of the cancer cell. Thus the cancer cell can often be more easily damaged or destroyed than can the normal tissue cells which surround it.

This fact was first appreciated to be of great importance in connection with the treatment of cancer by X-ray and radium, when it was discovered that certain tumors were extremely sensitive and others far more resistant to the effects of radiation.

Attempts to take advantage of this sensitiveness or vulnerability of the cancer cell have been made by the employment of chemical agents, either through the blood stream or by local injection intended to damage or destroy the cancer cell. Unfortunately, the degree of difference between the cancer cell and the normal tissue cells of the body leaves but a narrow margin of safety for this method, and either a dosage of the chemical is given insufficient to destroy the cancer cell, or so large a dose as to do damage to the rest of the body tissues. The use of colloidal lead by the Blair-Bell method of treatment is the most recent development of this nature, but colloidal solutions of copper, gold, and other heavy metals were tried and abandoned, before Blair-Bell began his work. One can only say that the method is of interest, that its successes have been very few, that it is accompanied by great discomfort to the patient, and by very real danger of a fatal outcome. We may conclude that it still remains in the experimental stage.

Modern treatment of cancer thus depends almost entirely upon surgery and radiation. Surgery may be called upon to remove the disease entirely by radical excision of the original tumor, together with the tissues known by experience to be those next in line to be involved by the spread of the disease. This is the radical operative treatment of cancer, and the possibility of success by this method varies greatly with the anatomy of the region involved. Perhaps the best examples of radical operative measures are the operations for cancer of the breast or the amputation of a leg for osteogenic sarcoma. If the disease has not already extended beyond the limits of the operative field, such operations are definitely curative.

Another method of surgical treatment is that of cauterization with the actual cautery, or by the use of the high frequency electric current in surgical diathermy and electro-coagulation. Such methods are just as much surgical as operations performed with a scalpel, and in certain regions (such as the oral cavity) have advantages which make them the method of choice in the performance of radical removal of the disease. They are of the utmost value also in dealing with more advanced cases where a palliative improvement in the patient's condition, rather than a radical cure of the disease is all that can be expected.

In contrast with surgical measures, lies the whole field of radio-therapeutics, including radium and X-ray. With these physical agents the possibility exists of influencing the growth of tumor cells deep within the body by means of penetrating radiation. Both of these agents may again be employed either for radical cure or for a merely palliative effect.

Perhaps the most conspicuous example of successful radical treatment of cancer by radiation is the use of radium in the treatment of cancer of the cervix. The anatomical condi-

tions and the tendency to early extension in the broad ligaments and pelvic lymph nodes make this an unsatisfactory form of cancer, except in very early and favorable cases, for cure by radical operation. On the other hand, radium employed as it is used in modern clinics, is capable of producing permanent cures in the more favorable cases, and at the same time supplies the most favorable form of palliative treatment for those cases which are too advanced for radical cure.

Radium may be employed in the form of surface applications or by the insertion of tubes or needles of radium salts or of emanation, directly into the tumor tissue. Of the three forms of radiation obtained from radium, both beta and gamma radiation are of service—beta radiation has only a superficial action, which is extremely caustic, and destructive; while gamma radiation more resembles short-wave X-rays in having great penetration. By appropriate screening with lead, platinum, gold, or silver filters and by distance we may cut out some or all of the beta radiation, and employ only the penetrating gamma radiation for deep therapy.

The earlier attempts to use implant or insertion methods were based upon the desire to obtain a more long continued action of the radiation than is usually convenient with a surface application. Bare glass tubes however, permitted so much of the caustic beta radiation to pass into the tissues that extensive sloughing took place, immediately around the tubes, and a wide area of radiation was not obtained. The glass tubes have now been largely superseded by gold "seeds" of emanation, or by platinum needles, and by this means less sloughing and more widespread radiation of the tumor is obtained.

With X-ray again, the softer rays from low-voltage apparatus and the short-wave length highly penetrating X-rays from the high-voltage machine are both available. For deep therapy, such as the treatment of bone metastases, and lesions of the lung, pleura, or mediastinum, the high voltage apparatus is essential.

There are many possible combinations of surgery and radiation applicable in the treatment of different forms of cancer. In some instances surgery is necessary to expose the tumor and to remove its major part, as in cases of cancer of the antrum, to be followed by direct application of radium to the remaining portions of the disease.

In other instances, radium by surface application or implant, or X-ray may be used upon an advanced case, to be followed by surgical or electro-coagulation removal of the partially or totally necrotic tissue.

The use of X-ray in prophylaxis against recurrence, as after operations for cancer of the breast, is again an instance of combined methods of treatment, and although prophylactic radiation is not held to be of great value in this community, its use elsewhere in the country is widely practised.

Almost everywhere, however, the idea gains ground that the most favorable moment for radiation treatment, as for surgery, is at the beginning, and it is sought to administer a destructive dose either of radium or of X-ray at the first treatment. If this fails other attempts may still be made, but never with such good chances of success, and the long continued small dose methods are very largely abandoned.

This résumé would be incomplete if mention were not made of surgical methods for the mere palliative treatment of the symptoms of advanced cancer, notably for the control of pain. By nerve blocking, either by section or alcohol injection, comfort can frequently be given to an advanced and hopeless case of cancer, to an extent that even morphia in large doses cannot equal, and in other instances palliative operations for the removal of painful and useless members by amputation and large sloughing tumors by excision or electro-coagulation, are amply justified.

Finally, careful medical supervision of the cancer patient contributes greatly to his comfort and happiness, even in the most advanced cases. A transfusion or aspiration of the chest or the relief of ascites by tapping, or by operation, may add greatly even though temporarily to the patient's comfort, and retentive apparatus in cases of bone involvement may be necessary.

With these resources available for the treatment of cancer it becomes a problem merely to select such methods or combinations of methods as are best applicable to the individual case, such a selection must invariably depend upon the cordial co-öperation and consultation of a group, which includes the surgeon, the radiologist, the pathologist together with representatives of the several specialities; only in this way can the cancer patient get what he is entitled to in the way of modern therapy.

MENINGIOMA WITH BRUIT: A REPORT OF FOUR CASES*

BY FREDERIC SCHREIBER, M.D.†

IN the diagnosis of intracranial lesions an audible bruit is usually thought to be associated with one of the various types of blood vessel tumors or anomalies. It is the purpose of this report to show that a similar bruit may be heard in the presence of a meningioma, four concurrent cases of this type having been recently observed on the surgical wards of the Peter Bent Brigham Hospital.

Auscultation of the head should be a part of the ritual of a neurological examination, particularly if an intracranial lesion is suspected. Although a patient may complain of "noises in the head" and auscultation reveal an intracranial bruit, more often the patient is entirely unaware of the bruit or has become so accustomed to it that he may not consider it unusual or annoying.

In the following case the patient was conscious of a bruit.

CASE I. P.B.B.H. Surg. No. 32127. Annie G., aged 41, was admitted Aug. 30, 1928, complaining of a "noise like a train" in the left ear for five years, associated with frontal headaches and vomiting spells. For two years there had been slowing of speech. Examination showed a low-grade bilateral papilloedema, right homonymous hemianopsia, paresis of the left Vth and IXth cranial nerves, and increased deep reflexes on the right. *A loud systolic bruit could be heard over the whole cranium, most marked in the left temporal region just anterior to the ear and extending along the course of the great vessels of the neck on the left.* A preoperative diagnosis of left temporal lobe tumor, possibly angioblastic in nature, was made.

At operation, Sept. 1, 1928, Dr. Cushing exposed a meningioma the size of a fist, deep in the left temporal lobe. It was an extremely vascular tumor and three stormy surgical sessions and several transfusions were necessary before the removal was complete. At the first stage very little tumor tissue was removed and the bruit remained unaltered.

Following the second stage, on September 19, at which time a great mass of tumor was scalloped out by electrosurgical methods, *the bruit was markedly diminished both subjectively and objectively* and showed no change during the succeeding interval.

Finally, on October 1, the remaining mass of tumor was completely extirpated; following this *the bruit disappeared entirely for a period of six weeks*, after which it gradually returned.

When last examined, Mar. 4, 1929, the systolic bruit was again well heard anterior to the left ear and along the course of the left carotid. The patient had made an excellent recovery, and although conscious of the bruit at times, she did not complain of it.

In the foregoing case it seems most probable that the bruit was due to permanent local changes resulting from the presence of tumor, rather than to the vascularity of the growth itself. Even though the bruit was diminished on partial removal, and disappeared after total removal of the tumor, it returned within a period too short for a possible recurrence of the tumor.

To the surgeon the meningiomas are notorious for the great increase in the vascularity of the adjacent and overlying bone and soft tissues. Not only are the larger vessels enormously increased in size, but also the lesser blood spaces. Consequently the systolic blood rush, when broken up in these spaces, may become audible, whereas ordinarily the blood passing through similar normal spaces produces no bruit. It is, however, difficult to explain why the bruit in Case I should have disappeared for a time after the total removal of the tumor and then gradually have again put in its appearance.

In the three remaining cases not one of the patients was subjectively aware of a bruit although it was readily disclosed on physical examination.

CASE II. P.B.B.H. Surg. No. 32495. Gertrude H., aged 50, entered Oct. 23, 1928, complaining of protrusion and diminished vision in the right eye of 10 years' duration; diplopia on looking to the right for 7 years; and supra-orbital headaches for 3 to 4 months. Examination showed a right exophthalmos with a fulness and swelling of the soft parts of the right temporal region. *A definite high-pitched "squeaky" systolic bruit was audible over the right eyeball and a lower pitched bruit was present over the right temporal region.*

A diagnosis of right temporal meningioma en plaque was made. Dr. Cushing operated Nov. 13, 1928, removing the major hyperostosis of the sphenoidal wing and the underlying small flat tumor with its involved dura. The dura was highly vascular and there was difficulty from bleeding throughout the operation.

The patient made a good postoperative recovery and was discharged Dec. 5, 1928. *The systolic bruit was apparently unchanged, being still audible over the soft temporal decompression area and heard loudest over the eyeball itself.*

Here again, the cause of the bruit is not clear. Before operation it was thought that there might be a pinching off of the ophthalmic or carotid arteries by tumor. However, the survival of the bruit after removal of the tumor and the variation in pitch depending on the point of auscultation make it probable that the cause for the bruit may be found in a more generalized interference with the local smaller blood vessels and blood spaces by bony hyperplasia or tumor growth.

CASE III. P.B.B.H. Surg. No. 28850. Thomas O'F., aged 66, was admitted May 27, 1927, complaining of protrusion and blindness of the left eye. Seven years before entry this eye had become prominent and the vision had gradually decreased to blindness. Left temporal headaches had been present since onset and there was recent failure of memory.

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Examination showed a left exophthalmos, low-grade choked discs, hyperaesthesia over the ophthalmic division of the left trigeminus, and a slight aphasia. There was a fulness in the left temporal region which had a slight visible pulsation. *Auscultation disclosed a soft systolic murmur in the region of this swelling and in addition a murmur could be heard over the exophthalmic eye itself.*

The X-ray report of the skull at this time read: "There is marked bone destruction in the posterior portion of the left frontal fossa, the left sphenoidal ridge, and the anterior portion of the left middle fossa. There is a marked increase in vascularity in this area with but little bone production, if any. The findings are probably due to a meningioma but are not characteristic because of the lack of bone reaction."

The patient was operated upon May 31, 1927 and the summary of Dr. Cushing's long operative note reads: "Primary ligation of left external carotid artery. Left osteoplastic resection with subtemporal decompression. Exposure of large, soft meningioma filling entire middle fossa, arising from a greatly eroded sphenoidal ridge, invading the orbit and temporal muscles extracranially. Excavation of the tumor by electrosurgical loop. Final dislodgement of main mass of growth. Marked loss of blood. Transfusion. Wound closed with cotton left for hemostasis. A close call."

The cotton was subsequently removed and the patient, when discharged, was greatly improved. He reported in November, 1927, in excellent condition, his aphasia having entirely disappeared. At this time *a faint blowing systolic bruit was heard over the left temporal decompression and also over the left eyeball.*

On Feb. 22, 1929 the patient was readmitted because of an extension of the tumor into the nasal spaces, for which he received a series of X-ray treatments. There had been apparently no change in the character or extent of the bruit since the former examination.

In this case the protrusion of the eye was caused by actual tumor invasion rather than by hyperostosis as in the preceding case. The soft blowing systolic murmur remained apparently unchanged by ligation of the external carotid, by removal of a great tumor mass, or even by the subsequent progress of the tumor growth. However, the X-ray showed marked vascularity of bone in the region of the tumor, and to this increased vascularity the persistence of the bruit may be due.

CASE IV. P.B.B.H. Surg. No. 14398. Mary D., was first admitted April 19, 1921, complaining of failing vision and protrusion of the left eye for 12 years. Examination showed a marked left exophthalmos and a non-tender swelling in the left temporal region. The X-ray disclosed a shadow of increased density involving the supra-orbital plate on the left as well as the wing of the sphenoid. No pulsation or bruit was noted at this time.

A diagnosis of left temporal meningioma was made and on May 4, 1921 Dr. Cushing removed a great bony overgrowth together with the flat underlying tumor in the left temporo-sphenoidal region. Following the operation the exophthalmos decreased and vision improved for a time. However, there was a gradual return of the exophthalmos and in 1925 the left eye was enucleated elsewhere.

On Nov. 13, 1928 the patient re-entered the hospital for excision of varicose ulcers of the leg. At this time there was evident a slight protrusion of the left orbital contents pushing the lids apart. *A definite systolic bruit was heard when the stethoscope was placed over the left supra-orbital region and over the area of the former decompression. The bruit was most intense just posterior to the left orbital ridge* but was also faintly heard over the right temporal region. The X-ray films showed a marked increase in the bony hyperplasia of the involved region as compared with the first examination seven years previously.

It was decided to remove some of the fatty tissue from the left orbit in order to make it possible for the eyelids to close tightly. No meningioma cells were found in the tissue removed and the bruit remained unchanged.

In this case it is worth noting that although the bruit was not heard on the patient's first admission seven years before, it apparently made its appearance hand in hand with the great increase in bony hyperplasia. Moreover the bruit was heard not only over the area invaded by tumor but more faintly in the temporal region of the opposite side. Every case of meningioma en plaque with bony hyperplasia is not, however, accompanied by a bruit, as is shown by careful auscultation of other recent similar cases on the wards both before and after operation.

Summary.

1. A local systolic bruit is present with some of the intracranial meningiomas.

2. There is apparently no relation between the size of the tumor and the intensity of the bruit.

3. The bruit may be unaffected by the removal of the tumor.

VERMONT STATE MEDICAL SOCIETY

THE One Hundred and Sixteenth Annual Meeting of the Vermont State Medical Society was held in the Woman's Club Rooms of the Town Hall, at Bellows Falls, Vermont, October 10 and 11, 1929. The first session of the meeting was called to order Thursday forenoon, October 10, 1929, at nine A. M., by Charles F. Dalton, M.D., President of the Society.

1. PRESIDENT DALTON: The 116th Annual Meeting of the Vermont State Medical Society will come to order. Prayer will be offered by Rev. Herbert Livingston.

2. Prayer, by Rev. Herbert Livingston.

PRESIDENT DALTON: The address of welcome will be given by Dr. Miner, of Bellows Falls

3. *Address of Welcome.*

DR. MINER: *Mr. President, Gentlemen of the Vermont State Medical Society, Delegates and Guests,* we are indeed glad to again welcome to this beautiful city the Medical Society. It has been a long time since last we met in Bellows Falls, over a quarter of a century has passed since that occasion. To be more exact it was October 15, 1903, twenty-six years ago. You will, of course, miss many familiar faces, some of whom have been called hence since that date. I will mention the names of only two of them because they are more intimately connected with the activities of the Society; one, who served as secretary for several years, Dr. George H. Goreham, and Dr. E. S. Albee.

It is with real pleasure that I announce that the Chairman of the Committee on local arrangements for that meeting in 1903, is today the Chairman of that same committee, Dr. J. S. Hill. Dr. Hill, with his associates, will, I am sure, attend to your every need, and I feel that, largely because of their efforts, when you go home you will carry with you pleasant memories, and an inspiration for better service after you have participated in this scientific program.

This morning may I extend an invitation to all of you who may be interested to stay over and join with us in our celebration of the opening of the "King's Highway", this next Saturday. This cement roadway is, I believe, of more interest in general than we have ever fully realized. It makes an easy and attractive entrance from the south to this wonderful playground and vacation ground of New England, and I feel that we might expect that many of our summer residents will come from that direction. Finally, I hope you will join with me in our work, for the day when the hard surfacing of our trunk line between here and Rutland shall have been completed, and this applies also to all unfinished traffic lines in this state.

Again I cordially welcome you to Bellows Falls.

PRESIDENT DALTON: We thank you very much, Dr. Miner, for your address of welcome, and we appreciate very greatly the courtesy which Bellows Falls has so far extended, and will extend during the rest of our stay. I have no doubt some of us will stay over and visit the "King's Highway".

At this time the next number on the program is "reports of officers and committees." What is your pleasure in regard to this item?

4. DR. RICKER: The committee reports, the Constitution and By-laws which are required, and Roster are in this pamphlet form, which each of you have. I wish to call your attention to one feature this year which has not been included for many years, and that is the Act of Incorporation of the Vermont State Medical Society, passed in 1813, and an amendment of the Act of 1814. I move that all committee reports be referred to the House of Delegates. Motion seconded.

PRESIDENT DALTON: All in favor of that motion will say aye; opposed, no. The ayes have it, and the motion is carried.

We now have the pleasure of welcoming some of the delegates from other states societies, and I will call first upon Charles F. Botsford, of Hartford, of the Connecticut Medical Society.

DR. BOTSFORD: *Mr. Chairman and members of the Vermont State Medical Society,* it is indeed a pleasure to be here as the official delegate of the Connecticut Society,—to bring to you our greetings. I am especially glad to be here this morning before the larger delegations which are on the program, for I have a better chance to see you. It seems to me that the relations between Connecticut and Vermont have always been quite close. A great many Connecticut people had a definite hand in the early settlement of your state, and I have known in Connecticut a very considerable number of members of the profession, who have been together with you, and in many cases had their training in your state. They have not had a fair share of professional emoluments coming to them, but it has seemed to me that the outstanding characteristic of the Vermont men, as I know them, has been their quality as men, the confidence they have had of their patients, and the appreciation of the people in their communities.

I notice on your program today that you have several numbers which depart, to some extent, from the usual program of a purely clinical nature. I have a feeling that the medical profession is in contact with the community in so many ways, and such varied angles now that it is quite wise that you have some of these

other angles brought to our attention. I am sure I am going to have a very enjoyable time with you. I thank you.

PRESIDENT DALTON: We have a delegate from Massachusetts, Dr. Van Nüys, from Weston, Mass.

DR. VAN NÜYS: *Mr. President and Members of the Vermont State Medical Society,* in the last twenty odd years of practice, four or five men from the West and South have commented to me on the friendly relationship among the men of the profession in Massachusetts. One of them said that he had been in his profession in several states through the West, and had never found anything like the friendly spirit that holds throughout New England.

New England is a distinct country, and when we come into New England I feel we are in the heart of America, and never more so than when we are in the heart of Vermont.

Our profession is one big body, bound together by the bonds of our medical fellowship, and I have never known a failure of that fellowship, and it is in that spirit that I bring you the greetings of the Massachusetts Medical Society.

PRESIDENT DALTON: We are very glad to welcome you, and hope you will take part in our discussions.

Is there anyone present from New Hampshire, Rhode Island, or Maine? (No response.)

We now proceed to the regular program of papers, and the first one is that by Vice-President Dr. George B. Anderson.

5. The Vice-President's Address appeared on page 1102, issue of November 28, 1929.

PRESIDENT DALTON: I want to introduce the delegate from New Hampshire, Dr. F. E. Spear, of Woodsville, N. H.

DR. SPEAR: *Mr. President and Fellows of the Vermont State Medical Society,* it gives me a great deal of pleasure to bring to this Society greetings from New Hampshire. We are trying, as you are, to carry on and uphold the dignity of the profession.

PRESIDENT DALTON: We are glad to have you with us and will be glad if you will take part in our discussions.

The next paper we are privileged to have is by the Vermont Commissioner of Industries, Mr. Clarence White, of Montpelier, on the "Workmen's Compensation Under the Vermont Law."

MR. WHITE: First of all, Mr. President and Gentlemen, let me say that I am a lawyer and not a doctor. I have just had my first experience on the operating table this morning, and having lost so much material from my body I feel somewhat like a jack-o-lantern, and I have no doubt the fact that I live is due to the anaesthesia of a spinal puncture.

WORKMEN'S COMPENSATION UNDER THE VERMONT LAW*

BY CLARENCE WHITE†

THE workmen's compensation idea originated in Germany. The underlying purpose of all the acts in this and foreign countries, is to cause the employer of an injured workman to bear some part of the burden of his care and support while he is unable to work and while he re-establishes himself in the economic picture if he is handicapped by loss of function. The Acts read much like insurance policies in some respects.

Under the Vermont Act compensation payments are made weekly to the injured person. The amount is one-half his average weekly wage, with $6 per week as a low limit and $15 as a high limit. Payments for one accident cannot continue for more than five years or 260 weeks. Therefore the maximum amount cannot exceed $3900.00.

Three varieties of compensation are paid.

(1) *For temporary total disability,* commencing on the eighth day of disability and ending when liability ends.

(2) *For specific loss of function,* commencing at the end of the period of temporary total and continuing for a certain number of weeks according to the function lost as laid down in the statute, which runs all the way from 260 weeks for total and permanent disability to the loss of half a toe, for which the victim gets four weeks compensation.

Apparently the lesser specific benefits are arbitrarily determined, and bear no relation to the compensation period for permanent and total disability, 260 weeks. A victim is entitled to 40 weeks for the loss of a thumb even though it is impossible for him to carry on his former vocation.

(3) *Death Benefits.* If the injured person dies within two years as a result of the injury his dependents are entitled to compensation. The statute states who shall be termed dependents and provides the amount of compensation per week, and the number of weeks during which the dependent shall receive it. This runs all the way from 45% of the average wage for a period of 260 weeks for a widow with more than two dependent children, to 15% to a dependent grandchild, brother or sister for a period of 208

*Read at the Annual Meeting of the Vermont State Medical Society, October 10, 1929, at Bellows Falls.

†White—Commissioner of Industries, Vermont. For record and address of author see "This Week's Issue," page 1316.

weeks. In no event can death benefits exceed $3500. If a dependent ceases to be dependent, compensation ceases.

The doctors of Vermont have been of great assistance to the Commissioner in the discharge of his duties. I have found them always courteous and willing to help the Commissioner to understand something he knew nothing about when the doctor began his explanation. These situations frequently arise at hearings before the Commissioner. Hearings are held when the parties are unable to agree as to the compensation due in the circumstances.

The doctor is often asked to state whether a certain condition arose from a certain accident, describing it. We usually rely on the doctor to state when disability ended in a certain case. He is very often asked to give his opinion as to the percentage of loss of function in a member. It is necessary to know this. For instance, if a man has lost 25% of the useful vision of his eye he is entitled to 25 weeks' compensation, since compensation for the total loss of an eye is 100 weeks. The Commissioner has to rely on a doctor's estimate in practically all partial loss of function cases. The loss must be stated in some fractional or decimal part of the whole, because the statute provides for compensation for specific loss on such a basis. If the doctor should answer "I think he ought to have compensation for six months" or "I think he ought to have $500," his answers would not be such as the Commissioner could base a decision upon which would pass successfully the testing laboratory conducted by his honor Chief Justice Watson.

I presume the doctors may have a passing interest in the medical provisions of the Act. Section 5784 reads as follows:

> **"During the first fourteen days of disability, the employer shall furnish reasonable surgical, medical and hospital services and supplies not exceeding the amount of one hundred dollars. The pecuniary liability of the employer for the medical, surgical and hospital services herein required shall be limited to such charges as prevail in the same community for similar treatment of injured persons of a like standard of living when such treatment is paid for by the injured person."**

This was amended by No. 99 of the Acts of 1927 so that the Act now provides a maximum of $50.00 within the first fourteen days of disability for the doctor, and $150.00 during the first thirty days of disability for the hospital. It is apparent that both of these provisions are inadequate to cover the injured person's expenditure in serious cases. Our office statistics show that from July 1, 1926 to June 30, 1928, the amount of $273,204.56 was paid out for medical and hospital benefits, and $585,349.41 for compensation, or a total of $858,553.97, of which 31.8% is represented by the medical expenditure. In the preceding biennial periods the division seems to be about the same. I have not made the computation but apparently the medical proportion will go a little higher. For purposes of rate making the National Council of Compensation Insurance keeps careful record of all expenditures and classifies the various types of industries, promulgating a rate for each type. Taking the Council's figures for medical expenditures in all classifications, thirty-five in number, and averaging them, I find that in Vermont the medical and hospital expenditures account for 38.66% of the pure premiums, while throughout the country it is 38.45%. These figures for Vermont are mostly based on the old medical statute of $100 in the first two weeks. The new law has been in operation so short a time that its effect does not appear in the figures as yet. The Council estimates that a 50% increase in medical expenditures would result in a net increase in rate to the insured of 16 2/3%. A decrease of 50% they estimate would result in a like reduction in rate. From the same source I learn that the medical expenditure accounts for about 21% of the present net premiums paid by employers in Vermont.

It is apparent that the doctor and the hospital, so far as dollars and cents are concerned, fares as well under the Vermont Act as under the Acts of other States taken on an average basis. Some interested parties feel that under the Vermont law there has for some time existed a tendency for some doctors to earn as much as possible in the first fourteen days in all cases, so that when a more serious case comes along the break will not be so bad. This is really an unnecessary precaution because Sec. 5815 provides that the doctor shall have a lien on compensation due the injured person he treats, so that if the medical benefits are not adequate to cover his bill he can secure the balance if he takes the right course. If the doctor wants to claim this right he should send the Commissioner an itemized statement and ask that it be approved and that payment from the compensation be ordered. The result is an order to the insurance carrier to pay the balance of the bill from the injured's compensation. The Commissioner tries to arrange the payments so that it will impose as little hardship as possible upon the injured person, but the doctor will get all the money he earns.

The statute states that the "employer shall furnish" necessary medical and surgical supplies and services. Other sections appear to place the insurance carrier in the shoes of the employer for all purposes. (5758, I, 5816, VI.) The obligation to "furnish" service ordinarily carries with it the right to select the thing furnished provided it is fit and adequate for the purpose. I therefore take it that the insurance company under the present statute has the right to select the doctor provided the one selected is as good as the community affords. This experiment is being tried now in one city in Vermont. In some States having progressive compensation

laws the injured has the right to select his own doctor. Massachusetts has a recent amendment to this effect. In most cases in Vermont I think the injured person makes his own selection. As a layman whose opinion may not be worth much on this point, I think that an injured person might make a better and more speedy recovery when attended by a doctor in whom he had confidence, than would be the case when attended by one in whom he had no confidence, yet who might be equally skillful and the employer's choice. In emergencies when the approved doctor is not immediately available there can be no doubt that the injured can select another. I wish some workable plan could be put into operation so that unlimited medical benefits could be had without an increase in insurance rates. The rate may not seem important to you but I assure you it has a very direct and patent bearing on legislative action and to some extent upon the success and growth of manufacturing in the State.

Industrial accidents are increasing everywhere as well as here. In Vermont they have increased from 8688 in 1922 to 13,981 in 1928, the rate of increase seems to be about 700 each year. With the increase the expenditures increase and consequently the rate of insurance. Favorable insurance rates and labor laws tend to attract industries and to keep the old ones from wandering away. We have many small communities in Vermont in which there may be but one or two industries, usually woodworking. These may be marginal industries, those which operate only when the market is favorable. An insurance rate of $5.00 per $100.00 of payroll is a considerable item. It may be the deciding factor, and it may and has caused operators to close down. I think we all have the interest of the State and its people at heart. Conscientious action by all concerned is bound to have its effect on the rate. Care on the part of employers, looking to safe machinery and safe practices, will prevent accidents and reduce expenditure; care on the part of workmen will do the same; a tendency toward smaller medical expenditures will have the same effect, and all combined will reduce the rate. Then perhaps a legislature will look with favor on unlimited medical as well as other improvements in the compensation law.

Discussion

President Dalton: Is Dr. Swift, of Rutland, here? (Not present.) If not, the discussion of this paper will be led by Dr. Wark.

Dr. Wark: The Commissioner of Industries, Mr. White, and previous commissioners have been of great assistance to the doctors in reaching an understanding where there is any point in question, as the settling of claims. The Commissioner has given you statistics, and in them the total medical cost, about 31% of the total expenditure. It is rather strange that there are no statistics obtainable showing the exact amount of moneys paid the doctor. The statistics show total medical cost, which include hospital, nurses and doctors. I do not see how anyone can intelligently criticise, or approve the amount that goes to the doctor without the proper statistics.

The Commissioner tells you "the employer has a right to choose the doctor", and he interprets the law that the insurance company stands in the shoes of the employer. If this is correct, then the insurance company can dictate as to which doctor may treat the employee. In Barre we have a unique situation which I am sure is what the Commissioner referred to in his paper—a local mushroom insurance company, assuming the authority of choosing a physician for traumatic cases. We understand the average rate they charge the employer is 80, as compared with 125 required by the Travelers, Aetna, etc. In May, this year, I received a letter from this insurance company saying: "After May 15 we shall refuse to pay your bills for treatment to injured employees of any of the firms that this company insures. We trust that you will inform each workmen so that there will be no question about your bills in the future. This will also apply to any cases that you send your brother for x-ray". At the hospital the following days it seemed to be the popular story, "did you receive a letter, too?" When it was sugared off, we learned there were a number of doctors who had received the letter, and we understood there were others who had not similar instructions. The same week, this local insurance company (which insures about 50% of the manufacturers) posted an 8x10 card in the Barre Granite Plants, which read "In case of an accident go to, or call Drs. ——", naming certain doctors, and stating below, "Bills from any other doctor will not be paid by this company". A general Hospital Staff meeting was called, in a spirit of co-öperating, because it seemed that the doctors whose names were not on this card are being discriminated against, also that this was an advertisement put up in the Barre Manufacturing Plants. Of course the matter of ethics entered and some of the high points that came out at the meetings were that we take a vote of the doctors present, whether they approved of this sign, and nobody approved of it. Then, a vote as to who disapproved of it, and everybody disapproved of it. Discussion brought out the admission that the doctors whose names are on this list had nothing to do with its origin, but the question arose if they didn't knowingly allow their names put on the list, and no man has a right to use your name in a public place without your permission, then that card should be taken down for ethical reasons. The answer was, "we didn't put it up, therefore we can't take the card down". At about that time the local insurance company made out a smaller

printed card, which is an exact copy of the large one, with the added name of Dr. C. H. Magoon, who is an optician, recommending him to the workmen for the removal of steel from the eye, and supposedly for operations for injuries to the eyes. Immediately I got in touch with Dr. Ricker, our Secretary of the State Society, and said here is an optician unlawfully doing surgery of the eye. The workmen reading this sign were surprised, and many manufacturers were astonished at this advertisement, restricting employees from obtaining medical service of their own choice, and didn't approve of it. Answering inquiries as to why this card was put up, the insurance man said, "the doctors whose names are not on that list are crooks and robbers". Was it not unfair that this inference be circulated among our honest, simple workmen, who do not understand all the ins and outs of the situation, with the apparent intention that they be led to believe there is something wrong with the doctors whose names are not on this advertising card?

To me it seemed here was something which should be brought to the attention of the State Medical Society; and if an insurance company is going to dictate to workmen which doctor they shall, or shall not, go to, I believe some legislation covering this should be accomplished. The laws of Massachusetts state that an employee may go to a physician of his own selection. The Vermont Commissioner is in accord with this law, and he believes it is only fair that the employee should go to a physician of his own choice. The way it always has been in our community, the work was fairly divided, all getting their share. I was curious to know just how much I received from insurance companies, so had my statistics looked over for the last three years, and the amount, including automobile, and workmen's accidents, has been approximately $600 a year, so if one does not get his share of the accident work, he has not lost greatly. But I think the fact that there is discrimination against certain doctors in the community, and the posted sign advertising that those doctors shall not be paid if the workmen go to them, is entirely wrong.

DR. BURBANK: Up in the mountains we have only one occupation besides construction jobs, and that is saw mills. A man says, I can't get insured because the company won't take me at a rate that the law allows them to charge, so I render service for nothing. Is that real or imaginary? A man states he does not carry the insurance for the reason that the insurance company will not carry him for the rate allowed by the law, the rate that the man must pay to the insurance company.

MR. WHITE: If that man in the saw mill employs more than ten men he comes under the Workmen's Compensation Act automatically, and is supposed to have insurance, and if he doesn't he is in the position of a self-insurer, and he must pay the bill. Insurance companies are not bound to take for risks any person who applies for insurance. It is the same as life insurance companies who will not insure every man that applies for life insurance. There are some operators of these mills who can't buy the insurance, and the insurance company says "we won't sell it to you unless you want to pay more than the usual rate."

DR. PATCH: I have contact with one or two concerns who make the plan of examining their men before accepting them, and the question has come up in two different cases, can a company accept in their employ a man who has hernia, and not assume all responsibility for what may happen to such a hernia? Can they have an understanding with that man that he will not hold the employer liable for accident that may arise from the hernia.

MR. WHITE: I think it is desirable to treat it in that manner. If a man has some particular defect which renders him liable to a certain type of injury, the employer can hire one man and refuse another, and you cannot inquire his reasons. If there happens to be a reason, and for that reason a man can't get work, I believe it is better for that man to agree that he won't claim compensation for injury caused by his defect. As a matter of expediency I think it should be that way. Whether that would agree with the opinion of the Supreme Court, if it should ever come up before them, I don't know, but from a practical standpoint I think it ought to be so.

PRESIDENT DALTON: Dr. Bancroft, of New York, we would be glad to hear from you.

DR. BANCROFT: During the past year I happen to have been Chairman of the Civic Policy Committee of the County Medical Society of New York. We have been studying the Compensation Act as it is applied in New York state.

In each injury there are five people involved—1st. The laborer: 2nd. The Employer; 3rd. The surgeon; 4th. The compensation commission; and 5th. The carrier, i.e., the insurance company. With all due respect to the Commissioner, the carrier is the most important factor in the Compensation Act as it occurs in New York state. The carrier is organized and has good financial backing. Because of this fact many abuses have occurred. Neither the laborer nor the employer has any choice as to who shall treat the injured man. Recently the Civic Policy Committee held a public forum, at which were invited to speak representatives of the carriers, the commission, the employers and the doctors. A very free discussion followed. As the result of this meeting I believe real progress may result. The representatives of the insurance companies have met members of the sub-committee of Economics, and the following proposals have been made: 1—

That the County Medical Society will aid the insurance companies in drawing up minimum requirements that a doctor should have in order to treat compensation cases; 2—The insurance companies will form an information bureau to which a doctor who desires to treat compensation cases may apply; if his training meets the minimum requirements he may be employed to treat cases without a direct statement from the carrier; 3—The County Medical Society agrees to appoint a commission to oversee disputed bills wherein the insurance company believes the medical man has charged too much. This would mean that doctors treating insurance cases would not see a case too frequently or charge too much if his bill might be reviewed by a committee of the County Medical Society; 4—The County Medical Society agrees to ask universities and hospitals to give courses which will fit students for industrial surgery.

We believe that the insurance companies are anxious to co-öperate with the medical profession and that if an attempt is made throughout the country to cordially co-öperate with them a good many of the difficulties of the Compensation Act may be corrected in a constructive manner without further legislation.

DR. ANGELL: I am very glad this matter of compensation has come up. I have had some interesting experiences in connection with it, some that have been very satisfactory, and some that have not. In regard to the insurance companies I have had some experiences which most of you have had, and maybe some have not had. I have had cases where the insurance companies have been extremely liberal, and have considered it good judgment to hospitalize men beyond the thirty days, and pay their bills, and pay the doctor for his care and treatment of the case, recognizing that in so doing they were in all probability limiting the amount of total disability.

I have had other cases where it didn't seem to me things came quite right. I cannot quite understand how the State of Vermont can pass a law that applies to you or me, if we are employing men, or to a corporation if it is employing men, that makes it compulsory and leaves it optional with the towns and municipalities. It seems to me that is making the law apply to one set of individuals, whether they like it or not, and the other set can do as they have a mind to.

Last year I had an elderly man who was working on the highway. Our town has not voted to accept the compensation act to apply to its employees. They were doing a job of road construction, for which the State,—I suppose this came under the State Aid, technically,—was expending a good deal of money, and some was expended in wages to this particular man. It occurred to me that was going around the bush a little bit. The State comes under that, in its workmen, outside of clerical forces, but they are spending their money, as State Aid, in towns that have not voted to come under it. Here comes an elderly man who has received an injury and has no people, and I take care of him, as a matter of charity. I cannot quite believe that is the legitimate end of such a law, that its application is right. I think it should be changed.

COMMISSIONER WHITE: I think Dr. Angell is right about that, but we must remember that when the Vermont legislature gets together sometimes they look with favor on measures that other people cannot see at all. As to the injustice that the doctor has pointed out, where a private employer is required to come under the compensation, whether or not he employs more than ten men, though a municipality does not have to. I cannot see any reason in that, and I think it will be changed in time.

PRESIDENT DALTON: We appreciate your being here, Mr. Commissioner, and are glad to have the information you have given us.

THE NOSTRUM AND THE PUBLIC HEALTH*

BY ARTHUR J. CRAMP, M.D.†

NOSTRUMS can be grouped in one of two general classes; first, those unscientific mixtures that are advertised, nominally at least, to the medical profession and reach the public by way of the prescription; second, those mixtures that are sold direct to the public. Nostrums in the first class are sometimes spoken of as "proprietaries"; those in the second class are colloquially known as "patent medicines"; both are, in fact, proprietary remedies. The public suffers from both classes, the only difference being that, in the case of the former, the physician has to share the responsibility with the nostrum exploiter. There is no clearly defined line of demarcation between these two classes.

Practically all non-official drugs used by physicians for prescription purposes are proprietary in character; that is, they are protected by a monopoly obtained either by patenting or

*Read before the Vermont State Medical Society, October 10, 1929.

†Cramp—Director, Bureau of Investigation of the American Medical Association. For record and address of author see "This Week's Issue," page 1316.

by means of a trade-mark. The majority derive their protection through trade-marks. High-class pharmaceutical manufacturers have not always favored such monopolistic methods. To understand the change that has taken place in the last forty years, note this statement from a Parke, Davis and Company advertisement of 1886:

> "Believing the proprietary system of protecting medicinal formulae to be the bane of scientific medicine and pharmacy, and opposed to all real progress in these pursuits, we do not protect our products or endeavor to monopolize the manufacture of medical formulae."

A year later, that is, in 1887, this same firm expressed a similar position in an advertisement that ran in the *Journal of the American Medical Association*. In this they said:

> "We rely for the reputation of our products on their superior excellence. We protect none of them by patent, copyright or trade-mark."

What a change in four decades! Today, Parke, Davis and Company sells, even under its own name, many preparations that are protected by trade-mark. It is but fair to say that fundamental changes in the character of medicinals have had something to do with bringing about this reversal of policy. Fifty years ago pharmacy was largely the art of mixing and compounding crude drugs, calling for little, if any, research and requiring but a small working staff. Today, the high-grade manufacturer of pharmaceuticals has an expensive scientific staff that may work for months, or even years, in perfecting a single synthetic drug of value in the treatment of disease. He has to meet this high overhead by some system of monopoly, either limited, as in the case of patents, or perpetual, as by trade-marks.

Many of the "patent medicines" of today were the "proprietaries" of yesterday. Shrewd exploiters discovered years ago that one of the least expensive methods of introducing a nostrum to the public was by way of the medical profession. After the profession had been widely circularized and much space bought in the advertising pages of medical journals of a certain type; after uncritical physicians had prescribed the products (of course in the "original package" with the name blown in the bottle or a monogram stamped on the tablet); after the patient had learned with disgust that his physician had prescribed what was essentially a "patent medicine" that he could have purchased direct, and subsequently did purchase without the formality of a visit to his physician —then the one-time "proprietary" threw off its "ethical" mask and became frankly a "patent medicine." Such has been the genesis of many a "patent medicine" on the market today. To name a few: "Antikamnia", "Sal Hepatica", "Pepto-Mangan", "Glyco-Thymoline", "Listerine" and "Fellows' Syrup of Hypophosphites."

The present paper deals with the "patent medicine" evil. Correctly speaking, there are practically no true patent medicines on the market; first, because few, if any, of the products of this type could be patented, and second, because patency or openness is the last thing the average "patent medicine" seller wants. Mystery and secrecy are his great assets. A product to be patentable must, according to the law—not always enforced, by the way—represent something new and useful; and this requirement of the patent law rules out the "patent medicine." A patent when granted gives the owner a legal monopoly on the manufacture and sale of his product for seventeen years, after which time the product becomes public property. The "patent medicine" seller finds it easier and far more profitable to put together a simple mixture of drugs that represents nothing either new or useful, to which he gives a fancy name, and obtains a trade-mark on that name. The trade-mark gives him a perpetual monopoly to the name and places no restriction on the composition of the product; nor, in the granting, is he required to give any information regarding its composition. What we colloquially call a "patent medicine" is a package medicine, nearly always secret in composition, sold under a trade-marked name for purposes of self-medication.

"Winslow's Soothing Syrup" of twenty years ago is, today, "Winslow's Syrup." But the product on the market today bears but little resemblance to the original preparation sold under that name. It used to contain morphine and alcohol. As the public became aroused to the menace of the "baby killers", many drug stores refused to handle the Winslow preparation. Then the formula was changed, and changed again, so that, today, it contains neither morphine nor alcohol. But it is still "Winslow's Syrup."

There is a tendency to assume that the National Food and Drugs Act, commonly known as the Pure Food Law, effectively safeguards the public against the menace of the nostrum. Although this law has been in force for more than twenty years, there is still some misapprehension of its power and limitations. First, the law, being a federal one, can apply only to products that enter into interstate commerce; that is, those that are made in one state and sold in another. Second, the Act has no jurisdiction over claims made for foods or drugs, except as those claims appear in or on the trade package.

The manufacturer of a medicinal product may be declared guilty of misbranding, if he makes statements (on or in the trade package) regarding the composition or the origin of his products that are either "false or misleading"; he may

also be found guilty of misbranding if the statements he makes (also on or in the trade package) regarding the curative effects of his preparations are both "false and fraudulent."

Limiting the scope of the application of the law to the claims made on or in the package, is one of the fundamental weaknesses of the national law. The Act does not penalize the most outrageously false claims that appear in newspaper advertisements, circulars, billboards, etc. Yet it is such advertisements that sell the product, rather than the claims on the trade package, which the public does not see until after it has purchased. Thus we have the anomaly of a law which does not forbid lying in the very avenues of publicity in which lying will be most profitable and do the maximum amount of harm, but only restricts the statements made on or in the trade packages.

The Pure Food Law has one more power in protecting the public against the nostrum evil: It requires "patent medicine" sellers to declare (on the trade package only) the presence and amount of eleven drugs and their derivatives: Alcohol, morphine, opium, cocaine, heroin, alpha and beta-eucaine, chloroform, cannabis indica, chloral hydrate and acetanilide. But except for these few drugs, the law permits the manufacturer to maintain complete secrecy regarding the composition of this preparation. He can, if he wishes, put in his nostrum such deadly poisons as carbolic acid, arsenic, strychnine, prussic acid, aconite and many other dangerous drugs, and the public be none the wiser.

The nostrum evil is essentially a public health problem, although, as in the case of many public health questions, it has its economic angle. The makers of "patent medicines" persistently charge that the medical profession's opposition to "patent medicines" as now exploited is based on the assumption that the sale of such products diminishes the income of the physician. The charge, of course, is wholly false. In fact, next to the "patent medicine" manufacturers and the newspapers that share the profits of nostrum exploitation, no class receives greater financial benefit from "patent medicine" advertising than physicians. The spirit of fear that nostrum advertising engenders sends probably as many patients to physicians as it does customers to the drug counter. The physician, of course, is opposed to the average "patent medicine" because it is exploited in such a way as to cause the public to magnify its trivial ailments, to drug itself unnecessarily and, in case in which something serious is the matter, to lose vitally valuable time in seeking competent aid. If the physician's attitude toward "patent medicines" was prompted by commercial considerations, he would say to the nostrum exploiter, "Go the limit; the more victims you get, the more patients I get!"

Under our present economic system there is a place for home remedies for the self-treatment of simple ailments. We cannot expect every person who suffers from a passing attack of constipation to come to us for a prescription. We know that the majority will go to the drug store for a laxative. It is, of course, true that the abuse of cathartics is one of the most widespread and pernicious of the evils of self-drugging, and it is also true that the rational treatment of many cases of constipation may not call for any purgative drug. Yet the fact remains that, in the majority of such cases, the man in the street is going to take laxative drugs, at least until he is better informed. It thus becomes our duty in the premises to warn the public of the dangers of the purgative habit and to urge that some restrictions be thrown around the sale of medicines of this class. The same applies to the use of other medicinal products that may rightly be classed as home remedies.

The menace that the nostrum of today holds to the public health is largely due to modern methods of advertising. In our grandfathers' day the advertiser notified the public where its demands might be supplied. Today the advertiser bends his efforts toward making the public demand things which otherwise it might not want or even know about. This principle may have no serious consequences when applied to the ordinary commodities of commerce, but there can be no excuse for using such methods in the sale of drugs. Advertising that is designed to convince well people that they are sick, for the purpose of causing them to purchase drugs to pour down their throats, is more than an economic offense; it is a crime against the public health. Yet this is the principle on which the average "patent medicine" of today is sold. As a concern that sells alcohol to makers of alcoholic "patent medicines" said in an advertisement to potential users of its products: "Keeping people pulling corks" is the key to success in nostrum exploitation.

Few people, other than physicians, realize that in the sale of medicaments, we have a class of merchandise that lends itself peculiarly to fraudulent exploitation. The nonexpert who is led by misrepresentation to purchase a motor car, a piano or a suit of clothes, which does not come up to the specifications, knows that he has been swindled and profits by the lesson. There is no such automatic check operating in the case of medicaments. The seller of clothing, pianos or automobiles has nature as his antagonist; wear and tear will show the purchaser whether or not he has been defrauded. But the exploiter of drug products has nature as an assistant; the purchaser is seldom, if ever, able to be sure whether any beneficial effect that may follow the use of certain medicaments is due to the drug or to the healing power of nature herself.

Household remedies for the family medicine chest should contain no habit-forming or dan-

gerous drugs; they should not be recommended for diseases that are too serious for self-treatment; they should be nonsecret, because the public has a right to know what it is taking; finally, they should be truthfully advertised and in such a way as will not make the public magnify trivial ailments and dose itself unnecessarily. Products which conform to these requirements are to be found on the shelves of every drug store in the country. They comprise certain of the simpler official products in the United States Pharmacopoeia and the National Formulary. Naturally, they are nonsecret, and being official, their standards of strength and purity are constant and enforced by state and national laws.

When the public is properly informed, so that it knows what preparations to call for in order to treat its simpler ailments, advertising of secret remedies will be entirely unnecessary. It devolves on the medical profession, and other agencies entrusted with the solution of public health problems, to give the public just these facts. Whether such a task should be undertaken by a scientific organization, such as the American Medical Association, or by governmental agencies, such as the United States Public Health Service, is a question. There is little doubt, however, that when such information has been widely disseminated, even if it takes a generation to do it, the making of hypochondriacs by suggestion, and the widespread evil of unnecessary drugging, will be gone. Gone, too, will be the business of keeping people pulling corks.

MISCELLANY

VERMONT DEPARTMENT OF PUBLIC HEALTH

November, 1929

Communicable Diseases reported during the month are, chickenpox 268, diphtheria 17, measles 16, mumps 15, scarlet fever 84, smallpox 16, poliomyelitis 1, typhoid fever 4, whooping cough 102 and tuberculosis 17.

The Laboratory of Hygiene made 1,425 examinations during November, classified as follows:

Examination	
For diphtheria bacilli	218
For Widal reaction of typhoid fever	38
For Malarial parasites	0
For evidence of syphilis	345
For tubercle bacilli	225
For gonococci in pus	139
Of blood for contagious abortion in cattle	59
Of water, chemical and bacteriological	28
Of water, bacteriological	114
Of milk, market	155
Of milk submitted for chemical only	5
Of milk submitted for microscopical only	11
Of foods	19
Of drugs	0
For the courts, autopsies	4
For the courts, miscellaneous	11
Autopsies to complete death returns	0
Examinations of animal heads for evidence of rabies	2
Miscellaneous examinations	52

In the Division of Communicable Diseases 44 cases of gonorrhea were reported, 56 cases of syphilis; total treatments given during the month 92, gonorrheal outfits sent out, 279; and 438 Wassermann outfits.

The Division of Tuberculosis gave talks in eight towns of the state, together with exhibits. 10,000 copies of the Modern Health Crusader were printed and distributed.

The After-care for Poliomyelitis Division visited 111 patients, 20 pieces of apparatus were fitted, 31 orthopedic corrections made to shoes and 23 pieces of apparatus were altered or repaired. Six patients were admitted to hospitals. The vocational worker of this Division made 31 visits to patients. Sales for the amount amounted to $243.04.

The State Advisory Nurse conducted clinics for preschool children. Arrangements have been made to continue the work of last year in some of the high schools of the state. The course will be offered to a selected number of schools as a "follow up" of last year's program.

Case Records

ANTE-MORTEM AND POST-MORTEM

AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

AT THE

MASSACHUSETTS GENERAL HOSPITAL

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CABOT CASE RECORDS

VOLUME XV

1929

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Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 15521

EPIGASTRIC AND PRECORDIAL PAIN

MEDICAL DEPARTMENT

A married Irish-American woman thirty-nine years old entered July 27 complaining of epigastric pain of six weeks' duration.

Six years before admission she was treated in the Out-Patient Department of this hospital for dyspnea on exertion and precordial pain. Ever since that time she had taken fifteen to twenty drops of digitalis a day. Soon after leaving the Out-Patient Department she was ill in bed for a week with an attack of "rheumatic fever". She recalled no fever, only excruciating pain on movement of the left wrist. Since that time she had done almost no work. Her only other symptom was occasional sharp non-radiating pain in the precordia and left shoulder on exertion. For the past few years she had had morning cough with sputum. For a year or two she had been more or less conscious of her heart beat, sometimes of rapid beat. For the past year her dyspnea had been increasing and she had occasionally had a heavy feeling in the epigastrium on exertion. For six months her feet had been cold at night.

On June 14, six weeks before admission. after having the heavy feeling in the epigastrium, she was seized at 4 p. m. with cramp-like epigastric pain radiating up the sternum and down the midline to the suprapubic region, aggravated by food. Since its onset she had taken only soft food. It persisted, so severe the first night that she could not sleep, later subsiding to a "sore feeling" made worse by food or exertion. She stopped the digitalis for several days without benefit. The pain in the precordia and left shoulder had been more severe for six weeks and she had pain in the lower left axilla on coughing and occasional flecks of blood in her sputum. She had urinated one to three times at night and sometimes had slight burning on micturition. She had occasional nausea, sometimes brought on by retaining her urine. She had one vomiting attack on July 25, lasting several hours. For a month her ankles and lower legs had been swollen every night, normal by morning, and her face had occasionally been swollen. Her feet sometimes were cyanotic after standing. For a week her sleep had been poor.

Her family history is not significant.

Her past history is not important except for an ulcer of the left eye in childhood and poor teeth.

Clinical examination showed a rather emaciated woman propped up in bed. Some resistance in the floor of the left supraclavicular fossa. Rather pigeon-breasted. At the right base dullness at the left of the eighth spine and medium moist râles. Apex impulse of the heart seen and felt 9 centimeters from midsternum, 2 centimeters outside the midclavicular line. Right border of dullness 1 centimeter to the right, supracardiac dullness 6 centimeters. Sounds and action normal. A long harsh diastolic murmur at the mitral area. An electrocardiogram showed auricular fibrillation, rate 80, slight left axis deviation. Blood pressure 180/85 to 190/90. In the right upper quadrant below the costal margin was tenderness and resistance, probably liver. Moderate left costovertebral tenderness. Extremities, pupils and reflexes normal.

Urine: 43 to 65 ounces, turbid or cloudy, specific gravity 1.008 to 1.030, a faint trace to a trace of albumin at both of two examinations. Sediment of both specimens (not catheterized) showed leukocytes, occasional granular casts once. Blood: hemoglobin 75 per cent, other findings normal. Hinton negative. Stools normal. Gastric analysis with half a milligram of ergamine and 100 cubic centimeters of 7 per cent alcohol: Fasting contents: 12 cubic centimeters, free acid 18, total acid 48. Test meal in half an hour: 15 cubic centimeters, free acid 80, total acid 82. Test meal in an hour: 5 cubic centimeters, free acid 72, total acid 75. Guaiac on all three specimens negative.

X-ray examination showed no evidence of organic disease of the stomach or duodenum. The measurements of the heart were increased. The heart was triangular in shape. There was definite evidence of dilatation of the auricles. The pulmonary conus was prominent. The chest film showed dullness at the base, rather homogeneous in character, along the interlobar septum. The diaphragm was also hazy. The right diaphragm was elevated and its excursion limited.

Temperature 100° at entrance, afterwards 96.8° to 99.2°. Pulse 72 to 127. Respirations 20 to 41.

On August 2 a cardiac consultant found an early diastolic murmur over the pulmonic area.

On August 3 examination showed shotty cervical glands with a palpable left supraclavicular gland. The patient was dyspneic and cyanotic. There was ptosis of the left eyelid. The heart action was irregular at the rate of 108, with no pulse deficit. The sounds were of poor quality with a palpable first sound and a harsh mitral systolic at the apex. Low in the right anterior axillary line was an area of diminished resonance and breath sounds and crepitant râles. In

the back the breath sounds were harsh throughout except at the right apex and the right base. There was dullness to flatness at the right base up to the scapula with almost absent breath sounds, diminished voice sounds and tactile fremitus and many crepitant râles. The right apex showed diminished resonance, breath sounds and voice sounds, no râles. The liver was three to four centimeters below the costal margin and tender. There was free fluid in the abdomen. The sacrum and extremities were edematous.

August 5 thoracentesis was done in the eighth right interspace in the posterior axillary line and three hundred cubic centimeters of straw colored fluid removed, specific gravity 1.015 after clotting, cells 50 lymphocytes (fluid clotted before count was made), many red cells.

The patient felt much better after increased digitalis and the chest tap. She was less cyanotic and dyspneic, and the edema gradually decreased. Then she developed acute right-sided failure. August 9 a portable X-ray showed the right diaphragm obscured by homogeneous dullness except in its medial third, where it appeared high. The left diaphragm was hazy. Both bases were less radiant than normal, especially the right.

August 11 the patient died.

Clinical Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

Of course when pain is confined to one joint like this you always doubt whether it is the entity of unknown etiology called "acute articular rheumatism." When we find a monarticular arthritis we ordinarily suspect gonococci or local sepsis. But I do not see how anyone can deny that true rheumatism can be confined to one joint. Until we really catch the etiologic agent, which I am not convinced we have yet caught, we have no way of knowing whether we have rheumatic disease or not.

The essentials in that history, before we look at the physical findings, I suppose are the attacks of arthritis, whatever its nature, and these three varieties of pain, one which seems to suggest angina, one that is much more definitely suggestive of the gastro-intestinal tract, and a third one of which I cannot make much in the left axilla. Then we have the evidences of a failing heart or of nephritis or both, the chief suggestion of nephritis so far being the swelling of the face and rather more vomiting than you expect in heart disease.

NOTES ON THE PHYSICAL EXAMINATION

I do not know what "some resistance on the floor of the left supraclavicular fossa" means. I wonder whether anyone can enlighten me. I have always found resistance in the right and also in the left supraclavicular fossa. I should be very much surprised if I did not find it. I suppose what they mean is that there was a difference in resistance on the two sides and some fullness or projection. Resistance of course is absolutely normal.

I cannot make out that dullness at the left of the eighth spine exactly either. But anyway there is dullness somewhere around that region, we had better say on the right side.

We are surprised to find left axis deviation. I should expect to find right axis deviation with the murmurs described there. But of course if that is an aortic murmur we should expect left axis deviation due to prominence of the left ventricle. But with a mitral murmur, as I suppose there was here, we should expect right axis deviation.

The increased pulse pressure goes better with an aortic murmur and lesion than with a mitral.

Notice that there is no edema now. The extremities are normal. That is rather surprising.

I should not say we have any good evidence of kidney disease from the urine examination.

They did all they could to provoke gastric secretion, so far as I understand it, and they got some secretion, nothing tremendous.

Both auricles were dilated in the X-ray film. I suppose that if they drew any conclusions from that they would say mitral disease, which is rather puzzling, because most of the facts obtained have been pointing to aortic disease and we have some difficulty in settling it. Dr. Holmes, the thing I want particularly to have you tell me is, "is this aortic disease or mitral disease?" I am told the radiographer can throw light on this.

Dr. George W. Holmes: There is a period of a little over two weeks between the plates. This plate was taken in the routine manner, that is, it was taken at seven foot distance, and it shows the heart without much magnification. The second plate was probably taken with a portable apparatus on the ward when the patient was much sicker, with the plate behind the back and the tube in front. Everything is magnified. It is not possible for me to answer in every case the question Dr. Cabot has asked, though once in a while we can do it. We can say the heart shadow is enlarged. We can also say the enlargement is almost entirely downward and to the left. That usually means the left ventricle. Sometimes it is the right ventricle, but I think it fair to assume that if you get enlargement to the left to that extent and if the heart is not displaced it is probably the left ventricle. This patient also has some increase across the auricles. Enlargement across the auricles may be due to valvular disease or to dilatation. A heart with broken compensation might give us just that picture. So that as far as the X-ray interpretation on this heart goes we should have to say enlargement of the left ventricle, probably of the right, and dilatation of the auricles due to hypertension or

aortic regurgitation, we should not be able to say which.

DR. CABOT: Suppose you knew that it was either mitral or aortic disease?

DR. HOLMES: I should vote in favor of aortic disease. She may have both, but the predominating lesion is probably aortic. The high diaphragm on that side is partly explained by the processes in the lung. This shadow that you see in the region of the interlobar septum may represent an accumulation of fluid between the lobes. It might be residual pneumonia, consolidation, but it is more likely to be fluid.

DR. CABOT: Could it be cancer? Last week we were surprised to find a thing that looked like that turn out to be cancer.

DR. HOLMES: Cancer of the pleura could easily do that. The changes in the lung I do not believe are all due to the heart. You can get a good many changes in the lung due to decompensated heart. This seems to me to be more marked on the right than on the left. The high position of the diaphragm could be due to enlarged liver. She had limited respiratory motion. It was not fixed. It is probably not due to adhesions, but to a process in the lung. It may mean the patient was suffering too much from pleurisy to take a deep breath.

DR. CABOT: I take it that so far as the particular question we have been considering is concerned, namely of aortic versus mitral disease in a patient who certainly seemed to have considerable hypertension and who has a fair rheumatic history, Dr. Holmes's evidence rather seems to favor aortic disease, which is favored certainly by the pulse pressure and the electrocardiogram (left axis deviation), and is perfectly consistent with the only murmur mentioned.

The temperature is essentially normal.

The cardiac consultant may have thought the early diastolic murmur over the pulmonic area was a Graham Steele murmur. That is the place and the time of a Graham Steele murmur, which is however much more characteristic of mitral disease than of aortic. It is supposed to be due to dilatation of the conus.

The palpable left supraclavicular gland is presumably what was referred to in the early lines of this history as "resistance". It makes us wonder about this X-ray.

I have no idea so far as to why there is ptosis of the eyelid.

The absence of a pulse deficit in a patient as near the end as we know this patient to be favors aortic rather than mitral disease. Most mitral cases near the end have a pulse deficit.

Nothing is said at the end about the diastolic murmur, which is rather trying. The area of diminished resonance in the right lung corresponds with the area Dr. Holmes described.

I have no powers of second sight, but I should like to bet that the lung signs reported August 3 were found after that last X-ray plate was taken. If you see a plate like that you go on a special hunt; that is one of the ways X-ray helps us with our other methods. They found so little before that I think they must have got some hints. All those signs are at the right base I take it, and in general if it were not for this X-ray I should say were due to some hydrothorax there or possibly to a very big liver.

I should say that they got dropsical fluid from the chest tap, not inflammatory exudate.

"Right-sided failure" means the right side of the heart of course, and the evidence must be in the lungs. I should say she was developing râles in the lungs and leave it to someone else to say what was the cause. I do not see how anyone can be sure of more.

DR. HOLMES: That is the area referred to in the record. It occupies the lower half of the right chest and in the inner third we can see faintly the outline of a portion of the diaphragm. The shadow extends well up on the border of the chest and rises highest in the axillary line. That is rather characteristic of fluid. I neglected to say that such a shadow might well be infarct, because we do not distinguish between infarct and consolidation from other causes. The heart shadow has changed somewhat in shape. Now it is more triangular in shape. One would suspect that the auricles are more dilated than in the previous plate.

DIFFERENTIAL DIAGNOSIS

DR. CABOT: We can confine our attention to the chest. Whatever else there is elsewhere in the body can be easily explained as evidence of passive congestion. It will be interesting to know whether it is all heart disease or whether we have sufficient evidence to warrant a guess of neoplasm in the lung.

Let us start with the heart. We have a rather particularly unsatisfactory record of what they hear. At the beginning they heard a long harsh diastolic apical murmur. That is an easy thing to hear. If they heard it at the beginning part of it was probably there at the end. The only thing the cardiac consultant pronounced upon was the early diastolic murmur in the pulmonic area. He did not confirm or negative the previous finding of a harsh murmur at the apex. That is several inches away from the place where this is heard. In this final examination we get nothing but a systolic, which is different from both of the other two murmurs. I do not see how anybody can feel at all secure in any conclusions he draws from that examination.

I think the most definite fact in the whole case, so far as I get it, is the blood pressure. Blood pressure is the one thing almost anyone can do, and that almost any two people can always agree upon. It is comparatively foolproof. This patient has certainly shown on two occasions a big pulse pressure. A big pulse

pressure is an unusual thing in uncomplicated mitral disease, so that it is very difficult to call this case mitral disease and nothing else, in the face of two measurements of big pulse pressure. On the whole Dr. Holmes and the electrocardiogram speak of a big left ventricle, which you do not get in any considerable number of cases of uncomplicated mitral disease. The most definite points about the valves point to the aortic valve and to aortic regurgitation.

Is there also a mitral lesion? I do not see how we can say there is. I do not see how anybody can rule it out. There is no evidence in the heart of any type of disease other than the rheumatic type. We have no evidence of syphilis in the blood, in the other parts of the body or in the history. We have no good evidence of hypertension, because with aortic regurgitation we expect as big a systolic as that and we have a low diastolic.

Then there is the question of this shadow in the right lung and its possible connection with the conditions found in the supraclavicular fossa. The examination showed shotty cervical glands with a palpable left supraclavicular gland. How much that amounted to I cannot tell from this examination. My impression is they were looking hard for something there, so that what they found may not have been very big. If it was as big as a pea I should think nothing of it; if as big as a marble I should think a good deal of it. This essential information they do not give. The character of that fluid in the chest is not that usually found with malignant disease. It was not bloody fluid. It is not inconsistent, however, with malignant disease. This type of fluid does occurs with neoplasms occasionally. Fluid that does make one think of malignancy is one with a high gravity and containing blood. This fluid had a few red cells, but those might easily be produced by the process of tapping. The patient is on the border line between the cancer age and what we call a rather early age for cancer. I do not think the age helps. We have no complaints or symptoms suggesting cancer. But I think you will remember the case at the Peter Bent Brigham Hospital last week in which there was absolutely nothing to suggest cancer during life, but cancer of the lung was found. So the absence of pressure symptoms, that is the absence of any dyspnea or swelling caused by blocking of the bronchus, or any bleeding from the bronchus, or any secondary collapse of the lung,—the absence of those things merely means that if cancer is present it is not connected with a bronchus. A tumor in the substance of the lung does not lead to bleeding and does not give any symptoms whatever. On the whole it seems to me we have rather little to suggest cancer.

I do not quite understand why she died. That is one of the things that makes me a little uneasy in making a diagnosis of heart disease and nothing else. Taking her age and history into consideration we should not expect her to die without something else; and yet I may be making too much of that. She certainly had fluid in the abdomen. We do not hear of fluid in the legs. I cannot say anything definite one way or another about any disease other than heart disease.

My diagnosis, then, is rheumatic heart disease with a lesion of the aortic valve and perhaps of the mitral valve; also hypertrophy of the left ventricle, very possibly an infaret in the right lung, passive congestion of the other organs, and that is all.

A STUDENT: Is it possible that she had tuberculous pleurisy?

DR. CABOT: I do not believe so. In the first place we had here very little fluid, a low gravity and very little fever. The vast majority of proved cases of tuberculous pleurisy have a gravity of 1.018, 1.019 to 1.021, varying three to four degrees or thereabouts. 1.015 is low for tuberculosis.

A STUDENT: Would you consider luetic disease with that high pulse pressure and ptosis of the left eyelid?

DR. CABOT: I am glad you brought up that point about the drooping left eyelid. When I used to work in the Out-Patient Department wandering around among the crowds I would often see a patient with one eyelid down and a rash on the face. "Oh yes,—there is a case of so-called cerebral syphilis who has been given KI followed by an iodide rash and has a syphilitic ptosis." There is that tradition that ptosis of the eyelid in a patient who perfectly well might have syphilis rouses suspicion. But here I should say that on the whole we have very little evidence of syphilis. We have a negative Hinton and little that points to aortic disease of the syphilitic type. I am glad that point was brought out, all the more because I cannot explain the ptosis.

A STUDENT: If the disease is on the aortic valve shouldn't you expect more signs of stenosis?

DR. CABOT: Not very much is said about it one way or another. We do not know that there is no thrill there. They have not said anything about a diminished aortic second sound or a plateau pulse. Nothing is said about a systolic murmur in that area. You are right that the vast majority of cases of rheumatic disease of the aortic valve have stenosis as well as regurgitation there. But here the evidence is not at all against the diagnosis I have made.

A STUDENT: What about the auricular fibrillation, rate 80, which the electrocardiogram showed in the first examination?

DR. CABOT: Auricular fibrillation with a rate of 80 is a rather unusual thing. I do not know enough about auricular fibrillation to know whether at that rate it is particularly character-

istic of mitral disease. The types I have seen have gone with a much more rapid rate.

A STUDENT: She had been taking digitalis for six years.

DR. CABOT: That is a good point. Auricular fibrillation certainly goes more often with mitral disease than with aortic.

A STUDENT: The pulmonary conus was said to be prominent. Doesn't that indicate the presence of right ventricular enlargement secondary to mitral regurgitation?

DR. CABOT: I do not see how.

A STUDENT: There might be pulmonic regurgitation as well.

DR. CABOT: Pulmonic regurgitation, except the Graham Steele type, is very rare.

My guess is that there was some evidence that they did not write down.

A STUDENT: Might the acute right-sided failure be the cause of death?

DR. CABOT: The picture as I get it does not lead me to suppose she died of acute right-sided failure without something more, what more I do not know. I think what has been brought out favors mitral disease; but on the whole I think I will stick to my original supposition: aortic disease and perhaps mitral too.

Now that I have committed myself, will you read Dr. White's opinion?

MISS PAINTER: "Serious rheumatic heart disease with well marked mitral stenosis and congestive failure. Auricular fibrillation now in progress apparently. The early diastolic murmur over the pulmonic area is probably due to functional pulmonic regurgitation (Graham Steele).

"The cause of the acute pain a few weeks ago I do not know, but probably acute passive congestion of the liver and gastro-intestinal tract accounts for it."

DR. CABOT: In other words Dr. White heard a diastolic at the apex, but did not mention it. He made the other diagnosis, of mitral stenosis, which he would not have made from a Graham Steele murmur alone.

CLINICAL DIAGNOSES (FROM HOSPITAL RECORD)

Rheumatic heart disease.
Mitral stenosis.
Congestive failure.
Auricular fibrillation.

DR. RICHARD C. CABOT'S DIAGNOSES

Rheumatic heart disease, with a lesion of the aortic valve, possibly of the mitral also.
Hypertrophy of the left ventricle.
Possibly infarct of the right lung.
Chronic passive congestion of all the organs.

ANATOMIC DIAGNOSES

1. *Primary disease.*

Chronic rheumatic endocarditis of the mitral, aortic and tricuspid valves; mitral and tricuspid stenosis and aortic regurgitation.

2. *Secondary or terminal lesions.*

Slight hypertrophy and great dilatation of the heart.
Infarcts of the lungs, old and recent.
Embolism of the right pulmonary artery.
Chronic passive congestion of all the organs.

3. *Historical landmarks.*

Chronic pleuritis, left.

PATHOLOGIC DISCUSSION

BY TRACY B. MALLORY, M.D.

The patient had rheumatic heart disease with three of the four valves involved. There was very marked mitral stenosis. There was a definite though anatomically not very severe aortic regurgitation without any evidence of stenosis, and there was quite definite tricuspid stenosis. The shadows in the lungs were without question caused by infarcts, of which she had a number. The pain at one time mentioned in the left axilla was possibly due to very marked adhesions at the left base, old fibrous ones. The other organs were negative except for chronic passive congestion. The hypertrophy of the right ventricle to my mind was proportionately greater than that of the left. The heart was not much hypertrophied so far as weight goes, 335 grams, not particularly large for a woman, but it was tremendously dilated. On opening the chest the total transverse diameter of the heart was 15 centimeters as it lay *in situ*.

The infarcts of the lungs were of varied age. There was also a large fresh embolus almost completely filling the right pulmonary artery, probably the immediate cause of death. The left pulmonary artery was free.

DR. CABOT: As so often happens when we try to make a differential diagnosis between aortic and mitral disease, the honors are easy in the end, because sometimes both are right. I hope someone made the diagnosis of tricuspid disease. I have never seen it made except by guess, so far as I know. What was the cause of the ptosis, Dr. Mallory?

DR. MALLORY: I do not know. We did not examine the head.

CASE 15522

ULCER VERSUS CANCER. UNUSUAL REFERRED PAIN

SURGICAL DEPARTMENT

First admission. An Irish-American clerk and bartender, thirty years old entered seventeen years before his third and last admission complaining of attacks of vomiting.

For ten years he had been having attacks of right lower quadrant discomfort and distention once in three or four days, coming on usually two hours after luncheon and relieved by vomit-

ing. The vomitus was all the food eaten that day and sometimes some food of the previous day. About once in three months he had severe pain in the right costo-iliac space at night, doubling him up, making him cry out, and lasting all night. In the intervals between these and the vomiting attacks he felt well. There had been no blood in the vomitus or stools. Acid foods caused discomfort. His bowels had always been constipated. He had gained slightly in weight.

He recalled no previous illness except "appendicitis" treated without operation in this hospital sixteen years before. (There is no record of this admission.) For three years he had urinated three or four times at night.

Clinical examination. Fairly well nourished. Heart not enlarged. Aortic second sound accentuated, rather sharp. Artery walls somewhat thickened. Abdomen negative except for dullness in the left flank (full colon?).

Urine not remarkable. Blood: 14,000 leukocytes, hemoglobin 75 per cent, slight achromia.

An X-ray plate showed a slight residue in the stomach at six hours, not confirmed at a second examination. The first portion of the duodenum was abnormal. There was a shadow above the lesser curvature, probably a loop of jejunum held by adhesions.

Operation was advised and refused. The patient was discharged unrelieved.

History of interval. After leaving the hospital he improved quite rapidly. For the next sixteen years he vomited only perhaps once a year following with relief one or two days of uncomfortable epigastric distention. Ten weeks before his second admission his old indigestion returned.

Records of the Out-Patient Department show a visit May 18, two weeks before his readmission. For eight weeks he had been having daily attacks of epigastric discomfort, gas and heartburn occurring one or two hours after luncheon and continuing until he induced vomiting. Two or three times in the two months he had spontaneous vomiting preceded by nausea. He sometimes was waked at night "by nervousness", and realizing that he had gas and discomfort, induced vomiting for relief. For six weeks his bowels had not moved without an enema. For the preceding six years they had not been constipated. He weighed 103½ pounds. He had lost ten pounds in two months. May 15 he gave up work on account of weakness. He was given orders for a milk and cream diet. On May 24 he returned in a pitiable condition after two days of the diet.

X-ray examination May 28 showed that the stomach filled rapidly. It was very low, somewhat atonic and dilated, and contained a large amount of fluid. A few waves of peristalsis, rather deep, passed over the entire stomach. None of the opaque meal could be forced through the pylorus. The six hour examination showed total gastric retention. At twenty-four hours there was a 75 per cent gastric residue.

For the week before readmission he was increasingly miserable. Eating caused such discomfort that he induced vomiting four times on May 30. His bowels were very constipated, not relieved by cathartics.

His family history is unimportant. He had had no other illnesses. He had always been thin and nervous.

Second admission. May 31, seventeen years after his first admission, he reëntered.

Clinical examination showed a dehydrated, hatchet-faced skeleton of a man with dry, taut brown skin. Many teeth missing or carious. Heart not enlarged; no murmurs. Abdomen markedly scaphoid, with a soft palpable mass reaching to the umbilicus and showing easily visible peristalsis passing smoothly from left to right. The rest of the examination was negative.

Urine and blood not remarkable. Hinton negative. Fasting contents of stomach: 284 c.c., free acid 21, total acid 43. Test meals: (1) at half an hour 130 c.c., free acid 15, total acid 30; (2) at one hour 155 c.c., free acid 15, total acid 27. All three specimens brown, sour, thin, guaiac negative.

Chart not remarkable.

Operation was again advised and refused. June 4 he was discharged.

History of interval. During the next two weeks he vomited twice. Otherwise his condition remained unchanged. He decided at last to have the operation.

Third admission. June 20.

Examination was as before.

Operation was done June 21. The patient did well for four days. June 25 he vomited once in the night. The next day he felt less well. He had lower abdominal distention, relieved by enemas. His legs and scrotum were waterlogged from subpectorals. His condition grew rapidly worse. The distention increased. June 28 he died.

Clinical Discussion

BY CHESTER M. JONES, M.D.

NOTES ON THE HISTORY

The first admission gives the history. Here is a bartender. That means a very definite industrial hazard. Therefore one should immediately suspect one of two things, so-called alcoholic cirrhosis or gastric crises.

There is no note as to whether that vomiting is induced or not. It was induced later on, therefore he may have induced the vomiting at the onset of symptoms.

Attacks of discomfort coming as frequently as once in three or four days sound as if they were on a purely mechanical basis. Therefore we think first of appendicitis. He may have had appendicitis in the past with adhesions, or a kink with volvulus, or partial obstruction which

lasted a very short time. We must consider that the symptoms may be on a mechanical basis, from something wrong pinching the bowel. He may have taken alcohol at noon with indigestion afterward. Pain coming on two hours after meals suggests ulcer. This pain came every four days, then every day for a while. I do not believe from this that we can consider ulcer very seriously. Constipation can give right lower quadrant pain. On the fourth day before he takes a cathartic he may have distress from a very full cecum.

If it is true that he vomited food of the previous day, it makes us suspect that there is obstruction here of a mechanical nature from some cause, congenital or acquired. That is extreme vomiting of retained products from constipation alone. He seems to have had real pain, and that again sounds like a mechanical situation which recurs too frequently to be due to any subacute infection. I am inclined to think it is not due to chronic appendicitis. The diagnosis of chronic appendicitis should be edged away from until everything else is ruled out. This sounds like obstruction based on old abdominal adhesions.

The fact that acid foods caused discomfort is probably of no significance.

My interpretation of the history of the constipation is that he may have been constipated because of some trouble in the region of the appendix. It may be habit constipation.

He gained slightly in weight. I think that is significant, if it was not a gain in water due to nephritis, nephrosis, or some such cause. He would not have gained if the pain had waked him. Anybody who is having frightful pain over a long period of time does not gain weight. He could not have been having quite so much pain as he says. The attacks however that wake him at night are real pain.

I am inclined to doubt the diagnosis of appendicitis treated without operation. Sixteen years ago there were not many cases of appendicitis that got out of the surgeons' hands. The fact that he was not operated upon makes us doubt that they thought it was appendicitis. He may have had right lower quadrant pain sixteen years ago produced by the same trouble now causing pain every three or four days.

For the nocturia again I am unable to offer any explanation unless it is a habit. He may drink a good deal of beer. He may drink more at night. I do not believe we have any evidence for nephritis.

They do not say anything more about the sharp aortic second. There obviously was not striking heart disease or hypertension. The suggestion of arteriosclerosis at thirty is unusual. No particular attention was paid to it, however.

A white count of 14,000 cannot be overlooked, but it is not supported by other evidence of infection. I do not know what it means.

The story is suggestive of gastric stasis. He vomited food eaten twenty-four hours before. He may have had stasis due to a loop of jejunum held by adhesions.

All that the X-ray shows is that there may be stasis and there may be adhesions. I am not anxious to say much about adhesions at this point. We talked more about adhesions causing symptoms seventeen years ago than we do now.

I suppose the surgeon who saw him felt that he had some lesion which was causing partial obstruction.

I do not see why after going on for ten years the vomiting should have stopped like this. Possibly he was put in bed for a week here, and rest in bed did straighten out the situation for the time being. Up to the end of the first admission it seems as if he had a partial obstruction. He may have been leading a better life so far as habits of eating were concerned. We do not know what his general hygiene was like during this period of time.

The occurrence of discomfort two hours after eating is very strange. That is the same time his symptoms occurred before, two hours after luncheon. It was not copied from what he told the doctor before, but apparently a fact. Previously it was right lower quadrant pain, now it is epigastric. That sounds more like peptic ulcer with constriction near the pylorus. It is entirely possible that this may have been an old ulcer with considerable spasm causing partial or temporary obstruction. He had a good deal of gastric retention. With rest and proper treatment the symptoms disappeared completely.

He was thin because he was afraid to eat much or because not much food was getting through or because he was vomiting. Undoubtedly he is not getting food through.

Whoever saw him thought he had ulcer. But the symptoms are not those of simple ulcer. Uncomplicated ulcer responds to treatment every time. We know he has something that suggests obstruction of some kind. It may be pyloric obstruction. It may be part of a process which continues further down into the right lower quadrant.

The X-ray examination on May 28 is also in favor of ulcer. Undoubtedly there is pyloric obstruction of some sort which may be due in part to organic constriction and in part to spasm of the pylorus.

DR. GEORGE W. HOLMES: The most noticeable things in the films of May 28 are perhaps the very much enlarged stomach and the fact that the stomach lies unusually low. The pylorus is in the right lower quadrant, where he had had most of his trouble. A stomach of that size seen on the X-ray films means dilatation. It is possible to get a similar appearance with a very large meal. We use a standard size for the meal. A large shadow like this usually means retention from the previous meal. The barium remained in the stomach for twenty-four hours. Such re-

tention as this almost invariably means pyloric obstruction. We could say pyloric obstruction and be correct in 99 per cent of cases. It is possible to keep the barium in the stomach for a long time by feeding. Occasionally there will be a delay in a sick patient. In such a dilated stomach peristalsis is apt to be faint, but they did see a wave passing over the stomach. We have not sufficient delay here to allow us to say what the obstruction is due to. Marked obstruction at the pyloric ring makes us suspect ulcer rather than new growth. A growth producing such an amount of obstruction would probably show ragged edges. The X-ray interpretation at the present time would be pyloric obstruction probably due to ulcer, but cancer cannot be ruled out.

DR. JONES: That fits in perfectly with the clinical picture. He is remarkably dehydrated and emaciated.

NOTES ON THE PHYSICAL EXAMINATION

The abdominal mass found at the second admission must be a full stomach. I do not see what else it could be. I suppose it is conceivable that it might be transverse colon, but I think that illogical.

The fasting contents of the stomach are characteristic of pyloric obstruction. The fasting amount of 284 cubic centimeters is large, and the findings of over 100 cubic centimeters at the half hour and hour intervals were also extremely high. The titratable acidity was not unduly elevated and may have been entirely lactic acid, although this is not mentioned. The negative guaiac is of course against the diagnosis of carcinoma. So is the presence of free acid, although it may well have been lactic acid. The X-ray findings and the whole story are rather against cancer.

He vomited only twice in the next two weeks. Presumably he had his stomach washed out frequently enough while on the wards. It may well have been that the gastric retention was due in large part to spasm. It is also probable that he ate very little during those two weeks.

I presume the operation that was done was a gastro-enterostomy, the logical operation for gastric obstruction.

He had edema from subpectorals and died because he was in such bad condition. The operation was performed too late. It was not the fault of the surgeon, but entirely the fault of the patient.

DIFFERENTIAL DIAGNOSIS

The logical diagnosis is duodenal ulcer. What other possibilities are there? Pain always in relation to intake of food is characteristic of ulcer. But the pain of duodenal ulcer is not usually in the right lower quadrant. The pain of ulcer can be aberrant, however; it can be outside the epigastrium, and very frequently is. Dr. Holmes mentioned that it might be because the stomach was low in position. The pain of ulcer is referred pain and does not depend at all upon the position of the stomach. He was supposed to have had appendicitis in the past, a queer finding when we have to find referred pain from the duodenum. In observations made on patients who have had appendicitis, the pain produced in the duodenum is often referred to the appendectomy scar rather than to the epigastrium. It is entirely possible that this man had appendicitis in the past, then an ulcer which nealed—ulcers do heal—and subsequently recurrence of the ulcer. I think such is the logical diagnosis.

If you want to think of the unusual things, he may have some bands causing partial obstruction in the region involving the pyloric ring or upper jejunum. I do not think that is a good diagnosis.

Duodenal diverticulum is the second one of these unusual diagnoses. It is a most extraordinary type of explanation, which is merely an attempt to explain some queer symptoms and explain them all by one diagnosis. I do not believe he has duodenal diverticulum.

PRE-OPERATIVE DIAGNOSIS

Obstructing peptic ulcer.

OPERATION

Upper abdominal midline incision under spinal anesthesia. The pylorus was completely obstructed. There was a tumor as large as a golf ball in the first part of the duodenum, probably an ulcer, and a small nodule on the greater curvature of the stomach close to the pyloric ring. There was another scar area higher on the lesser curvature, with considerable thickening at this point also. In view of the fact that there were two separate lesions and that the patient was very much starved, it was decided to do merely a posterior gastro-enterostomy. Two mesenteric glands were removed for pathologic examination.

PATHOLOGIC REPORT

Mesenteric glands. Two soft nodules, each 1.5 centimeters in diameter.

A microscopic examination shows a hyperplastic lymph node which contains a large metastatic deposit of adenocarcinoma.

Metastatic adenocarcinoma.

CLINICAL DIAGNOSES, POSTOPERATIVE (FROM HOSPITAL RECORD)

Carcinoma of the stomach.
Duodenal ulcer.
General peritonitis.

DR. CHESTER M. JONES' DIAGNOSES

Duodenal ulcer.
Old appendicitis.

ANATOMIC DIAGNOSES

1. *Primary diseases.*

Carcinoma of the stomach.
Multiple ulcers of the stomach.

2. *Secondary or terminal lesions.*

Operative wound, gastro-enterostomy.
General peritonitis.

PATHOLOGIC DISCUSSION

BY TRACY B. MALLORY, M.D.

The autopsy was restricted to examination of the stomach only. He had an ulcerated tumor mass situated exactly at the pyloric ring. The center of the lesion was on the anterior curvature and the edges extended round to within a centimeter of each other on the anterior wall, producing a marked degree of obstruction. The edges were hard. When the stomach was opened it seemed probable it was cancer. That was confirmed by microscopic examination. Two small ulcers without much induration and not penetrating very deeply were found along the lesser curvature. So the primary difficulty was carcinoma which may or may not have developed on the basis of old ulcer. My guess is rather that it did. I think that in these cases in which the pyloric ring is actually involved, where the tumor spreads into the duodenum and stomach and where one gets such a long history, one is inclined to think ulcer was present for years before cancer developed.

DR. JONES: Was anything found in the region of the appendix?

DR. MALLORY: We are not allowed to examine that.

DR. JONES: The finding of cancer accounts for the short duration of the new attack,—only ten weeks. Any case that comes in with a short history in a patient over forty should have the diagnosis of cancer disproved first. But his story in the past is very hard to link up with ulcer. I suppose he had pyloric ulcer before. While he was being investigated the ulcer healed. The reference of pain into the right lower quadrant was very unusual.

DR. HOLMES: Was the cancer on the duodenal or the pyloric side of the pyloric ring?

DR. MALLORY: It went both ways. It extended about 2 centimeters into the stomach and 3 centimeters into the duodenum.

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PREPARALYTIC POLIOMYELITIS

THE peak of poliomyelitis has been passed for the year 1929; the disease has a distinct seasonal incidence, reaching its height in August and September. Nevertheless, it is well to keep the disease in mind, for sporadic cases occur during the winter months and another year, unfortunately, is sure to bring its usual toll of cases and, perhaps, even an epidemic. Let us therefore be prepared by noting the latest additions to the literature on the subject.

Previous notations in this column have called attention to the splendid work by Dr. W. L. Aycock and his associates under the direction of the Harvard Infantile Paralysis Commission; a most important contribution from this group has been the development of the idea of preparalytic poliomyelitis. Up to a few years ago most physicians rather sniffed at the idea of making a diagnosis of poliomyelitis before the paralysis had appeared. Infantile paralysis without paralysis seemed to be an absurd conjecture. It was argued that one might as well make a diagnosis of epilepsy in a patient who had never had a "fit". This point of view, however, has been gradually overcome by the investigative work of numerous research men, among whom, in this country certainly, Dr. Aycock has been a leader. He has shown very definitely that, especially during an epidemic of poliomyelitis, it is feasible to make a diagnosis of this disease in the preparalytic stage.

Aycock's criteria for making the diagnosis depend both upon the appearance of the patient and the character of the spinal fluid. During an epidemic, especially where children or young adults are in contact with other cases, an abrupt onset of headache, fever, vomiting and drowsiness should suggest poliomyelitis. Stupor is not common; most patients in the preparalytic stage are extremely alert and at times exhibit a decided apprehensiveness when they are handled. The degree of prostration is greater than might be expected from the fever, there is often slight flushing of the face with circumoral pallor, an anxious expression and the pulse is usually rapid and out of proportion to the fever. Rigidity of the neck and spine are most characteristic, and this is especially brought out when the patient attempts to sit up, an action accomplished by a series of shifts from one side to the other, with much of the weight of the torso supported by the arms and hands. In the sitting position the spine is held erect and the body is not raised quite to the vertical position but remains supported on the arms. In addition to this clinical picture, the spinal fluid findings are important: the pressure is usually higher than normal, the cell count is increased, often to 50 or 100 per c.mm., and the globulin test is positive. It should be brought out here that these essential tests—the pressure, the cells, and the globulin—can all be done at the bedside, or very close to it, by any physician, so that laboratory diagnosis, other than what the physician can do himself, is not essential.

In addition to pointing out the facts in regard to the early diagnosis of this disease Aycock *et al.*, in a recent paper*, emphasize the importance of convalescent human serum in the treatment of poliomyelitis in the preparalytic stage. An exceptional opportunity was taken advantage of during the 1928 epidemic of this disease by the workers of the Harvard Infantile Paralysis Commission. In Watertown and Waltham they treated 62 cases during July, August and September. The actual methods used in treatment were reported by Drs. Aycock and Luther in the *Journal of the American Medical Association* 91:387, 1928. Their recent report deals with the mortality rate and with the amount of paralysis found a year after the epidemic. The death rate was considerably less in the treated cases of the Watertown-Waltham group than in untreated cases which appeared in the State else-

*Aycock, W. L., Luther, E. H., McKhann, C. F., Smith, E. C., and Kramer, S. D. Preparalytic Poliomyelitis: Further Observations on Treatment with Convalescent Serum. Jour. Infect. Dis., 45: 175-190 (Sept.) 1929.

where, roughly, a ratio of 6% to 18%. They also found, in examining the cases a year later, that the average amount of paralysis was very much smaller in the treated cases than in the untreated cases. Their figures, which should be read by all those interested in this subject in the original article, are convincing. One feels that, provided the diagnosis is made in the pre-paralytic stage and human convalescent serum given at that time, patients with this terrifying disease now have a better chance for recovery than ever before.

There is another part of this work that should be emphasized and Dr. Aycock does not hesitate to bring out the fact that studies of this type are only made possible by the co-öperation of a large number of workers. He mentions numerous hospitals that assisted him, as well as the Massachusetts State Department of Health. Part of the funds for this research were donated by the Vermont Department of Public Health and by the International Committee for the Study of Infantile Paralysis. The bulk of the support came from the Harvard Infantile Paralysis Commission, an organization supported by voluntary contributions. The type of work produced and the good done by the physicians working under this Commission entirely justify the public support given to this body.

THE DOCTOR AT EASE

WHAT more pleasant recreation, with the onset of the winter season, than reading, especially if we follow Carlyle's dictum and make our reading "graceful, ingenious and illuminative"! The picture of the warm fireside, the carefully placed light and a good book brings to all of us pleasant memories and pleasurable anticipation. To the doctor, perhaps more than to many in other walks of life, reading, if not overdone, renews energies, preparing him for the next day's intensive labor as nothing else can. Few fail to feel the strain of active practice; books afford the surest relief to the monotony of what is so aptly called, "the daily grind".

Reading, however, should afford more than "relief". Those who fail to draw from books an intellectual stimulus, an emotional reaction, or a new insight into life, fail miserably to profit by their fair inheritance. "Reading, and much reading, is good," says Burke, "but the power of diversifying the matter infinitely in your own mind, and of applying it to every occasion that arises, is far better; so don't suppress the *vivida vis.*" The living force of books, novels, biography, history or essays, was never greater than it is today. The bookshops abound in good reading, much of which ought to appeal to the doctor. Let us examine some of the more recent publications and see if we cannot find the surest relief for our most melancholy moments and some of that "matter" which Burke would have us diversify in our own minds.

Novels by doctors are always of interest; fortunately we have two excellent modern physician-novelists, Warwick Deeping and Francis Brett Young. Deeping's latest book, "Roper's Row," has a doctor for the main character, Christopher Hazzard. We first meet him as a poor, very poor, medical student in London, timid, ill-favored, lame, peculiar. This queer boy enters Bennet's Hospital and is unmercifully "ragged" by his fellow students, a bit of English student atmosphere quite unfamiliar to this country. One enjoys, however, the description of life in the hospital, Hazzard's one friend, Moorhouse, old Sir Dighton Fanshawe, the visiting man, the prize-giving, and many other bits of London hospital life. "Squit" Hazzard gets through it all, develops a fondness for children, settles in London, finds a splendid wife and, after a long struggle, succeeds. Only a physician could have written a book with so much insight into medicine and, while the delineation of Hazzard cannot be considered as superior to that of other doctors in literature, the story arouses our sympathy and gives us a new insight into the soul of a sensitive man, roughly handled by those who ought to have the greatest insight into human nature and its weaknesses.

Young's best medical book, "My Brother Jonathan," gives a splendid picture of a doctor, country practice in England, and the tragedies which it may entail. It comes much nearer greatness than any book of Deeping's; we would find it difficult to believe that any physician would fail to find enjoyment, recreation in the best sense of the word, and a stimulation to be a better doctor from this book. The characters are living persons, even as you and I, and the nobility of Jonathan is sure to leave a lasting impression on anyone's mind. Dr. Young's latest story, "Black Roses," is not primarily concerned with the medical world, although a secondary character, Viva Pietro, is a medical student in Naples. Towards the end of the book one finds a good description of the effects of a cholera epidemic on the population of unsanitary Naples. In connection with these novels mention should be made of the touching last chapters, so brilliantly written, in Hemingway's "A Farewell to Arms." Seldom has an author drawn a word picture of a hospital and childbirth with more power of visualization. In spite of some defects, this story sets a new standard of description by the use of conversation limited to the fewest possible words. Hemingway is the son of a physician.

For those who fail to find pleasure in the modern novel, in spite of its being one of the best methods of depicting our times, there are many other new books of medical interest. That strange character, combining science and religion, a true product of the early seventeenth century, Stephen Hales, should be classed as second only to Harvey as the founder of the modern science of physiology. A country par-

son, in a small corner of England, carried on, alone and unaided, his extraordinary researches on blood pressure, setting an example of the use of the scientific method of investigation at a time when most men's thoughts were turned in other directions. It must have taken more than ordinary courage, in 1709, to tie a mare to a common field gate, cut open the crural artery, put in a brass pipe connected with a glass tube, and watch the blood rise to nine feet. Mere observation was not enough for the "worthy and good" parson of Teddington, but he must also calculate the output of the heart, measure the pulsation, estimate the venous pressure and make numerous other experiments. Although we honor Hales as the first to correctly appreciate the blood pressure, we should not forget his work on botany or his inventive ability, which he turned very largely to the construction of artificial ventilators for buildings,—unheard of before his time. His biography, by one of the physicians to the London Hospital, is a rich storehouse about the man and his time.

Long before Hales' time, however, medicine had its beginnings and an evening spent with primitive man is not without pleasure. One learns that before the First Dynasty (*c.* 3400 B.C.) of Egypt, the dead were buried in dry sand and so perfectly has nature preserved the remains that even now "it is possible to examine anatomically the soft and perishable parts of the body and to ascertain the nature of the food they ate by scrutinizing the contents of the alimentary canal". Barley and millet have been identified, as well as fish, for the predynastic Egyptians made and used metal fishhooks. It is thought that the wonderful phenomenon of natural preservation in Egypt must have led later to attempts to preserve by artificial means, by mummification, an art which reached the high stages of its development by the time the Pyramids were built. The art of making mummies is of great interest. The brain was removed, piecemeal, through the nose; the Egyptians had no idea of its importance as the heart was considered as the seat of the intelligence. The viscera were taken out through an incision in the left flank, the thoracic contents, except the heart, which was always left *in situ*, by opening the diaphragm. The viscera were preserved in four Canopic jars, or returned to the abdominal cavity. The body, except the head, was then immersed in a salt bath for many days. These, and many other details, form an interesting chapter in Dawson's new book on the beginnings of medicine. But perhaps one would rather read about the *modern* dance of death, so skillfully depicted by Peyton Rous. We know so little about the science of dying, in spite of all we have learned about the art of living. Rous points out that "the Dance of Death has lengthened, the music has turned sweeter, Death has become less boorish, his partner not so passive, but the measure is still the same, still the only one that the human organism has proved able to tread". The ultimate limit of life has not extended the least fraction of a year, so, in time, Rous presumes "the search for an elixir of life will be resumed more avidly than ever". This little book, full of wisdom and common sense, deserves wide reading.

"Education begins the gentleman, but reading, good company, and reflection must finish him". What better "good company" than good books!

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THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

GRAVES, ROGER C. A.B., M.D. Syracuse University College of Medicine, 1918. Urologist to the Carney Hospital. Genito-Urinary Surgeon to the Pondville Hospital. Member of the Consulting Staff of the Brockton, Quincy and Winchester Hospitals. Member of American Association of Genito-Urinary Surgeons. Secretary of the New England Branch of American Urological Association. His subject is: "Malignant Disease of the Genito-Urinary System." Page 1273. Address: 12 Bay State Road, Boston.

SMITH, GEORGE GILBERT. A.B., M.D. Harvard 1908. F.A.C.S. Urologist, Massachusetts General Hospital and Palmer Memorial Hospital. Surgeon, Collis P. Huntington Memorial Hospital. His subject is: "Carcinoma of the Genito-Urinary Tract." Page 1277. Address: 6 Commonwealth Avenue, Boston.

QUINBY, WILLIAM C. M.D. Harvard 1902. F.A.C.S. Clinical Professor of Genito-Urinary Surgery, Harvard Medical School. Urologist, Peter Bent Brigham Hospital. His subject is: "Tumors of the Prostate." Page 1280. Address: Peter Bent Brigham Hospital, Boston.

JACKSON, HENRY, JR. M.D. Harvard 1919. Associate, Thorndike Memorial Laboratory, Boston City Hospital. Assistant Physician, Collis P. Huntington Memorial Hospital. Physician, Pondville Hospital. Physician to Tumor Clinic, Beth Israel Hospital. Instructor in Medicine, Harvard Medical School. His subject is: "The Diagnosis and Treatment of Malignant Lymphoma." Page 1284. Address: Chestnut Hill, Massachusetts.

DRESSER, RICHARD. Ph.B., M.D. Johns Hopkins University 1921. Roentgenologist, Me-

morial Hospital, Worcester and Pondville Hospital. Visiting Roentgenologist, Massachusetts General Hospital. Assistant Roentgenologist. Harvard Medical School. His subject is: "Irradiation Treatment of Malignancy." Page 1285. Address: Memorial Hospital, Worcester.

HODGSON, JOHN S. Ph.B., M.D. Harvard 1915. F.A.C.S. Surgeon to Out-Patient Department, Massachusetts General Hospital. Associate in Neurological Surgery, Massachusetts General Hospital. His subject is: "The Treatment of Pain in Cancer." Page 1287. Address: 144 Commonwealth Avenue, Boston.

GREENOUGH, ROBERT B. A.B., M.D. Harvard 1896. F.A.C.S. Visiting Surgeon, Massachusetts General Hospital. Consulting Surgeon, Collis P. Huntington Memorial Hospital. Assistant Professor of Surgery, Harvard Medical School. His subject is: "Modern Cancer Therapy: A Résumé." Page 1287. Address: 8 Marlborough Street, Boston.

SCHREIBER, FREDERIC. A.B., M.D. Harvard 1923. Interne, Harper Hospital, Detroit, 1923-25. Assistant to Dr. Max Ballin, Detroit, 1925-28. Assistant in Surgery, Harper Hospital, 1926-28. Assistant Resident Surgeon, Peter Bent Brigham Hospital, Boston, 1928-29. Assistant Surgeon (Neurosurgery) Harper Hospital 1929 and Children's Hospital of Michigan 1929. His subject is: "Meningioma with Bruit. A Report of Four Cases." Page 1290. Address: 1508 Eaton Tower, Detroit, Michigan.

WHITE, CLARENCE. Commissioner of Industries Vermont. His subject is: "Workmen's Compensation Under the Vermont Law." Page 1293. Address: Montpelier, Vermont.

CRAMP, ARTHUR J. M.D. Wisconsin College of Physicians and Surgeons, Milwaukee 1906. Director, Bureau of Investigation, American Medical Association, Chicago. His subject is: "The Nostrum and the Public Health." Page 1297. Address: American Medical Association, 535 North Dearborn Street, Chicago, Ill.

MASSACHUSETTS LEGISLATIVE NOTES

The Massachusetts Department of Public Health has issued recommendations for legislation. The first recommendation is based on facts found after special study, that 46 per cent. of towns in Massachusetts between 5000 and 25,000 population have no milk inspection and that in some communities the largest proportion of milk is sold raw. In some cities and towns inspectors are untrained or disinterested.

The Department recommends pasteurization of milk in cities and towns having more than 5000 people with permission for towns under 5000 people to adopt the act as outlined. Massachusetts is among the states showing the highest proportion of tuberculous cattle. To meet these conditions House Bill No. 44 and House Bill No. 45, copies of which appear herewith, have been introduced.

HOUSE No. 44

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Thirty

An Act Relative to the Appointment of Milk Inspectors in Towns

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. Section thirty-three of chapter ninety-four of the General Laws is hereby amended by inserting after the word "may" in line two the words:—except as provided in and subject to section thirty-three A,—so as to read as follows:—*Section 33.* The board of health of a city shall, and the board of health or the selectmen acting as such board of a town may, *except as provided in and subject to section thirty-three A,* appoint one or more inspectors of milk and one or more collectors of samples of milk, who shall have the powers, and perform the duties, conferred and imposed by law upon such inspectors and collectors, who shall be under the control of, and whose compensation shall be fixed by the board appointing him or them; but no person whose business, in whole or in part, is the buying or selling of milk, or who is an officer, agent or employee of any person engaged in the sale thereof, shall be appointed as such inspector. Each person so appointed shall be sworn before entering upon his official duties and each such inspector shall publish a notice of his appointment for two successive weeks in a newspaper published in his town, if any; otherwise he shall post such notice in two or more public places therein. Such inspectors may be removed in cities in the manner provided in sections forty-three and forty-five of chapter thirty-one, and in towns at any time, by the appointing board.

SECTION 2. Chapter ninety-four of the General Laws is hereby amended by inserting after section thirty-three the following new section:—

Section 33A. The board of health or the selectmen acting as such board of each town having a population of more than five thousand shall annually in October nominate an inspector of milk and before November one shall send to the department of public health the name, address, and occupation of the nominee. Such nominees shall be appointed until approved by the department and shall hold office until November one. A town shall, for each refusal to comply with the provisions of this section, forfeit not more than five hundred dollars. The department may appoint an inspector for such a town and may remove any inspector who does not properly perform the duties of his office and may appoint another inspector for the residue of his term.

HOUSE No. 45

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Thirty

An Act Relative to the Sale of Milk

Be it enacted by the Senate and House of Representatives in General Court assembled, and by authority of the same, as follows:—

Chapter ninety-four of the General Laws is hereby amended by inserting after section twenty-two the following new section:—

Section 22A. Whoever, himself or by his servant or agent, sells, exchanges or delivers, or has in his custody or possession with intent so to do, milk drawn from a cow, unless such cow has been tested within a period of one year by a tuberculin test, approved by the director of animal industry, and has been found not to react thereto, shall be punished for the first offence by a fine of not less than twenty-five dollars nor more than one hundred dollars, for the second offence by a fine of not less than fifty dollars nor more than two hundred dollars and for a subsequent offence by a fine of fifty dollars and by imprisonment for not less than two nor more than three months. This section shall not apply to milk delivered or intended to be delivered for pasteurization nor to pasteurized milk as defined in section one, nor to milk from producers whose application is on file with the division of animal industry for an official test under the provisions of chapter three hundred and fifty-three of the acts of nineteen hundred and twenty-two.

This section shall take effect in towns having a population of twenty thousand or more on the first day of January, nineteen hundred and thirty-one; in towns having a population of more than ten thousand but less than twenty thousand it shall take effect on the first day of January, nineteen hundred and thirty-two; and in towns having a population of more than five thousand but less than ten thousand, it shall take effect on the first day of January, nineteen hundred and thirty-three. This act shall apply to any town upon acceptance at a town meeting.

The third recommendation is accompanied by a bill which will compel towns to maintain a program for tuberculosis prevention and control as set forth in House Bill No. 46, a copy of which herewith appears.

HOUSE No. 46

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Thirty

An Act Relative to Subsidies to Cities and Towns for Cases of Pulmonary Tuberculosis

Be it enacted by the Senate and House of Representatives in General Court assembled, and by authority of the same, as follows:—

Section seventy-six of chapter one hundred and eleven of the General Laws, as amended by chapter two hundred and eighty-four of the acts of nineteen hundred and twenty-six, is hereby further amended by inserting after the word "subsidy" in the eleventh line the following:—unless it maintains a program for tuberculosis prevention and control which at least meets the required standards, which the department is hereby authorized to establish and from time to time alter, amend or abolish, nor,—so as to read as follows:—*Section 76.* Every town placing its patients suffering from tuberculosis in a county, municipal or incorporated tuberculosis hospital in the commonwealth, or in a building or ward set apart for such patients by a county, municipal or incorporated hospital therein, shall be entitled to receive from the commonwealth a subsidy of five dollars a week for each patient who has a legal settlement therein, provided that such patient is unable to pay for his support, and that his kindred bound by law to maintain him are unable to pay for the same; but a town shall not become entitled to this subsidy *unless it maintains a program for tuberculosis prevention and control which at least meets the required standards, which the department is hereby authorized to establish and from time to time alter, amend or abolish, nor* unless, upon examination authorized by the department, the sputum of such patient be found to contain bacilli of tuberculosis, nor unless the hospital building or ward be approved by it, and shall not give such approval unless it has by authority of law, or by permission of the hospital, full authority to inspect the same at all times. The department may at any time withdraw its approval. In the case of hospitals having a bed capacity which, in the opinion of the department, is in excess of the number of beds needed for the localities which these institutions serve for patients exhibiting tubercle bacilli in their sputum, the subsidy above provided shall be allowed for such patients not exhibiting tubercle bacilli in their sputum as, in the joint opinion of the superintendent or medical director of the institution and of a member of the department designated by the commissioner, are bona fide cases of pulmonary tuberculosis and have been in the institution more than thirty days.

The fourth recommendation is that all children shall be successfully vaccinated against smallpox before the age of one year and revaccinated in the seventh year and certain other requirements with respect to vaccination as provided in House Bill No. 47, a copy of which herewith appears.

HOUSE No. 47

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Thirty

An Act Relative to Vaccination against Smallpox

Be it enacted by the Senate and House of Representatives in General Court assembled, and by authority of the same, as follows:—

SECTION 1. Chapter one hundred and eleven of the General Laws is hereby amended by striking out sections one hundred and eighty-one to one hundred and eighty-three, inclusive and inserting in place thereof the following new sections:—

Section 181. All children shall be successfully vaccinated against smallpox before they reach the age of one year and shall be so vaccinated in the seventh year of life. The parent or guardian of a child subject to the provisions of this section shall present to the board of health of the town where such child resides a certificate signed by a physician registered in this state that the child has been successfully vaccinated as herein required, which certificate shall be so presented within thirty days after such vaccination.

Section 182. If the parent or guardian of a child subject to the provisions of the preceding section presents to the board of health of the town where the child resides a certificate, signed by a physician registered in this state, that the physician has, at the time of giving the certificate, personally examined the child and that he is of the opinion that the physical condition of the child is such that his health will be endangered by vaccination, he shall be exempt from the provisions of said preceding section for a period of not less than two months nor more than one year from the giving by the physician of said certificate, which period shall be determined by said board of health. Upon the expiration of said period, such board shall require that such child be vaccinated unless his parent or guardian presents a certificate, signed by a physician, as aforesaid, that the condition of the child, as theretofore certified, continues, which certificate shall exempt such child to the same extent as the previous certificate presented.

Section 183. Any parent or guardian who fails to have a child vaccinated if so required by section one hundred and eighty-one or one hundred and eighty-two shall be punished by a fine of not more than ten dollars.

Section 183A. The school committees of towns and the head masters of private schools shall not admit to any school under their charge any child under seven years of age who cannot give satisfactory evidence of having been successfully vaccinated, unless exempted as provided in section one hundred and eighty-two, and they shall not admit nor allow to remain in such school any child who is seven years of age or older and cannot give satisfactory evidence of having been successfully vaccinated since the age of six years, unless exempted as aforesaid. Said committees and masters shall immediately give written notice to the local board of health of all children who cannot give evidence of having been vaccinated as herein specified. Violation of this section shall be punished by a fine of twenty dollars.

Section 183B. The board of health of a town where any incorporated manufacturing company, infirmary, reform or industrial school, hospital or other establishment where the poor or sick are received, prison, jail or house of correction, or any institution supported or aided by the commonwealth is situated may, if it decides that it is necessary for the health of the inmates and employees or for the public safety, require the authorities of said establishment or institution, at the expense thereof, to cause all said inmates and employees to be vaccinated. For failure or neglect to cause such vaccination, if required as aforesaid, the person directly responsible for the conduct of such establishment or institution shall be punished by a fine of twenty dollars.

Section 183C. Boards of health, if in their opinion it is necessary for public health or safety, shall require and enforce the vaccination or revaccination of any or all the inhabitants of their towns. Whoever, being over twenty-one and not under guardianship, refuses or neglects to comply with such requirement, and the parents and guardians of children under twenty-one who are not vaccinated in compliance therewith shall be punished by a fine of not more than ten dollars.

Section 183D. Boards of health shall provide means of vaccination, when required by section one hundred and eighty-one or one hundred and eighty-two, without charge for those unable to pay therefor, and when required by section one hundred and eighty-three C, without charge for any person, and for said purpose shall appoint one or more registered physicians to perform such vaccinations at the public expense. Notice of such appointment shall, within seven days thereafter, be given to the department.

Section 183E. Boards of health shall enforce the provisions of sections one hundred and eighty-one to one hundred and eighty-three D, inclusive, and for failure or neglect so to do shall forfeit not less than fifty nor more than two hundred dollars.

SECTION 2. This act shall take effect on September first of the current year.

The Department of Mental Diseases recommends the adoption of two bills which relate to the investigation of the mental condition of persons held for trial and the duties of probation officers and to mental examination of defendants in criminal cases which are herewith appended.

HOUSE No. 38

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Thirty

An Act Providing for Investigations as to the Mental Conditions of Persons held for Trial where the Offense Charged is Punishable by Life Imprisonment

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

Section one hundred A of chapter one hundred and twenty-three of the General Laws, as inserted by chapter four hundred and fifteen of the acts of nineteen hundred and twenty-one, and as amended by chapter three hundred and thirty-one of the acts of nineteen hundred and twenty-three, by chapter one hundred and sixty-nine of the acts of nineteen hundred and twenty-five, by section one of chapter fifty-nine of the acts of nineteen hundred and twenty-seven, and by chapter one hundred and five of the acts of nineteen hundred and twenty-nine, is hereby further amended by striking out in the second line the words "a capital offense" and inserting in place thereof:—any offense punishable by death or imprisonment for life,—so as to read as follows:—

Section 100A. Whenever a person is indicted by a grand jury for any offense punishable by death or imprisonment for life or whenever a person, who is known to have been indicted for any other offense more than once or to have been previously convicted of a felony, is indicted by a grand jury or bound over for trial in the superior court, the clerk of the court in which the indictment is returned, or the

clerk of the district court or the trial justice, as the case may be, shall give notice to the department of mental diseases, and the department shall cause such person to be examined with a view to determine his mental condition and the existence of any mental disease or defect which would affect his criminal responsibility. Whenever the probation officer of such court has in his possession or whenever the inquiry which he is required to make by section eighty-five of chapter two hundred and seventy-six discloses facts which if known to the clerk would require notice as aforesaid, such probation officer shall forthwith communicate the same to the clerk, who shall thereupon give such notice unless already given. The department shall file a report of its investigation with the clerk of the court in which the trial is to be held, and the report shall be accessible to the court, the probation officer thereof, the district attorney and to the attorney for the accused. In the event of a failure by the clerk of a district court or the trial justice to give notice to the department as aforesaid, the same shall be given by the clerk of the superior court after entry of the case in said court. Upon giving the notice required by this section the clerk of a court or the trial justice shall so certify on the papers. The physician making such examination shall, upon certification by the department, receive the same fees and traveling expenses as provided in section seventy-three for the examination of persons committed to institutions and such fees and expenses shall be paid in the same manner as provided in section seventy-four for the payment of commitment expenses. Any clerk of court or trial justice who wilfully neglects to perform any duty imposed upon him by this section shall be punished by a fine of not more than fifty dollars.

HOUSE No. 39

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Thirty

An Act Relative to the Duties of Probation Officers and to Mental Examinations of Defendants in Criminal Cases

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

Section eighty-five of chapter two hundred and seventy-six of the General Laws, as amended by section two of chapter three hundred and twenty of the acts of nineteen hundred and twenty-six and by section two of chapter one hundred and seventy-nine of the acts of nineteen hundred and twenty-nine, is hereby further amended by striking out, in the fifth line, the word "and" and inserting in place thereof the words:—Such report shall include such information as the probation officer may have obtained as to any previous criminal prosecutions of the accused person and as to any previous examinations of his mental condition and as to his habits, employment, home conditions, associates and his physical and mental condition. Said officer shall also,—by inserting after the word "been" in the sixth line the words:—prosecuted or,—by inserting after the word "possession" in the eleventh line the words:—or as the probation officer may himself have been able to obtain,—and by inserting after the word "probation" in the twenty-seventh line the words:—He may also recommend that the defendant be examined by the department of mental diseases or by other competent means with a view to determine his mental condition and the existence of any mental disease or defect which would be a material factor for the consideration of the court in making a disposition of the case and upon such report the court may continue the case or, after conviction, suspend the imposition of sentence and direct that such examination be made,—so as to read as follows:—

Section 85. In addition to the other duties imposed upon him, each probation officer shall, as the court may direct, inquire into the nature of every criminal case brought before the court under the appointment of which he acts. Such report shall include such information as the probation officer may have obtained as to any previous criminal prosecutions of the accused person and as to any previous examinations of his mental condition and as to his habits, employment, home conditions, associates and his physical and mental condition. Said officer shall also inform the court, so far as is possible, whether the defendant has previously been prosecuted or convicted of crime and in the case of a criminal prosecution before said court charging a person with an offence punishable by imprisonment for more than one year the probation officer shall in any event present to the court such information as the board of probation has in its possession or as the probation officer may himself have been able to obtain relative to prior criminal prosecutions, if any, of such person and to the disposition of each such prosecution, and all other available information relative thereto, before such person is admitted to bail in court and also before disposition of the case against him by sentence, or placing on file or probation. When it comes to the knowledge of a probation officer that the defendant in a criminal case before his court charged with an offence punishable by imprisonment for more than one year is then on probation in another court or is then at liberty on parole or on a permit to be at liberty, such probation officer shall forthwith certify the fact of the presence of the defendant before his court to the probation officer of such other court or the parole authorities granting or issuing such parole or permit to be at liberty, as the case may be. He may recommend to the justice of his own court that any person convicted be placed on probation. He may also recommend that the defendant be examined by the department of mental diseases or by other competent means with a view to determine his mental condition and the existence of any mental disease or defect which would be a material factor for the consideration of the court in making a disposition of the case and upon such report the court may continue the case or, after conviction, suspend the imposition of sentence and direct that such examination be made. He shall perform such other duties

as the court requires. He shall keep full records of all cases investigated by him or placed in his care by the court, and of all duties performed by him. Every person released upon probation shall be given by the probation officer a written statement of the terms and conditions of the release.

A BILL TO PROVIDE FREE MEDICAL SERVICE

A bill designed to provide free medical service to the people of the Commonwealth was filed with the Clerk of the Massachusetts House of Representatives, December 20, 1929, on the petition of Armand C. Bang of Newton and Dr. Gilbert W. Haigh. In the roster of members of the Massachusetts Medical Society the name of Gilbert W. Haigh, 242 Burncoat Street, Worcester, appears.

In addition to supplying free medical and surgical service to all citizens of Massachusetts, a new department provided for in the bill would maintain hospitals and furnish necessary drugs and mechanical appliances for the patients.

An initial appropriation of $1,000,000 for organization is provided with a corps of well paid administrators. The new department would under the provisions of the bill take over the functions of the departments of mental diseases, public health and local boards of health. It would also invade the present fields of industrial accidents and public welfare.

Comment on the bill seems to be unnecessary.

MISCELLANY

THE MASSACHUSETTS HOMEOPATHIC HOSPITAL HAS CHANGED ITS NAME

Public notice has been given of the adoption of the name Massachusetts Memorial Hospital in place of the former name, the Massachusetts Homeopathic Hospital.

This institution at 82 East Concord Street is one of the largest hospital units in New England, with a long and honorable career, and furnishes clinical facilities for Boston University School of Medicine.

The Massachusetts Memorial Hospital now includes the Massachusetts Homeopathic Hospital at 82 East Concord Street, the Evans Memorial Hospital at 80 East Concord Street, the Robinson Memorial Hospital on Stoughton Street, the Out-Patient Department at 750 Harrison Avenue, the Department for Contagious Diseases at 296 Allston Street, Brighton; the Convalescent Home for Women at 23 Everett Street, Dorchester; the Home for Nurses at 55, 61 and 63 East Newton Street, and Vose Hall on Stoughton Street.

AN EFFORT TO CONTROL THE MOSQUITO NUISANCE IN MASSACHUSETTS

The first meeting of the Massachusetts Mosquito Control Association was held in Boston December 17, 1929.

Much interest in this problem was shown and there seems to be a determination to make Massachusetts as free as possible of mosquitoes.

This, however, can only be brought about by general co-öperation by municipalities and individuals.

Towns may appropriate money for control of mosquitoes under Chapter 252 of the General Laws as amended in 1929.

The following officers were elected: Frederick H. Payne, Greenfield, president; Charles S. Ayling, Barnstable, vice president; Harry S. Borden, Sandwich, treasurer; R. H. Newcomb, Boston, secretary; Charles S. Clarke, Duxbury; William W. Davis, Cambridge; George D. Chamberlain, Springfield; Fred S. Dill, Eastham; W. A. Kinsman, Newburyport; Ernest J. Dean, Chilmark; L. M. Lamb, Boston; A. A. Hadley, Marion; T. H. Walker, Westboro; A. W. Jones, Nantucket, and George F. Booth, Worcester, directors. Senator C. F. Haley and United States Senator David I. Walsh were elected honorary vice presidents.

THE NEW ENGLAND MEDICAL CENTER

The Announcement of the New England Medical Center is being distributed, a copy of which appears below.

FOR NEW ENGLAND—
A New Type of Medical Center

A new and challenging project today greets the people of New England—the establishment, in the heart of Boston, of a medical center for the two-fold purpose of caring more effectively for the needy sick, both young and old, and of training family doctors for the small communities of New England. In its larger sense this project leads a movement to bring back to a position of greater importance the family practitioner and the ideals which he represents.

The New England Medical Center, thus to be formed, will represent the combination of forces of three well-established Boston institutions—the Boston Dispensary, the Boston Floating Hospital and the Tufts College Medical School.

When completed, the Medical Center will consist of a great city dispensary, a modern free hospital for babies and small children, classroom and clinical teaching facilities for the training of doctors, and scientific laboratory, x-ray and operating equipment for the use of all three. Thus it will combine in one organization medical treatment, hospital work, research and teaching.

The formation of the New England Medical Center will mark the crystallization of a new and significant trend in medicine. During the last fifty years the trend has been entirely in the direction of the scientific control of disease, and has resulted in the development of great hospitals, great laboratories and great teaching centers. It has been a period of unprecedented progress and immeasurable benefits. Yet, during this period, a serious and widening gap has appeared in the medical structure. Modern, scientific medicine has acted as a magnet to draw the great majority of doctors into the large centers as specialists, laboratory research men and teachers. Fewer and fewer men have gone out into the smaller communities of New England to become practicing

physicians. The old family doctor—the backbone of the medical profession—is gradually dying out.

Thus, while medicine has developed to a greater perfection than ever, its development has been unbalanced. We have enough doctors in the large cities, but far too few in the rural districts. We have superlative medical resources, but they are not accessible to a large proportion of the people.

The New England Medical Center, through its program of bringing back the family physician and injecting the ideals of the family physician into its treatment of the sick, will help restore a much-needed balance.

In its training of family doctors, the new Medical Center will carry on and enlarge the work already being done by the Tufts College Medical School. For some years Tufts has made its goal the training of doctors as active practitioners for New England. In the last three years its entering classes have been wholly composed of New England residents. The School has already sent out into New England more than sixteen hundred graduates, who are practicing today in over three hundred separate communities.

The Medical Center will do more than train students. Through a program of informal graduate instruction, by which older practicing physicians may come to it from time to time for study and research, it will help to remove a serious handicap to the country doctor—that of being "out of touch" with modern medicine.

In another way the New England Medical Center will bring the family doctor back into the spotlight, and that is in its human, understanding attitude in the care of the sick within its doors.

The Boston Dispensary—Boston's oldest medical institution and one of the outstanding dispensaries of America—has rendered during its 133 years of existence such signal service in the relief of sickness and the promotion of health among the poor that it well deserves the title of "Boston's family physician." Its medical work, its emphasis on preventive medicine — warding off disease instead of waiting to cure it, its health promotion work through its food clinic, its great strides in combating venereal diseases, its sending out of physicians to treat the sick poor in their homes, its evening pay clinic which brings the benefits of medical care at cost to the "'white collar" class of small wage earners—these have been outstanding contributions to the health of the community. Last year approximately 30,000 men, women and children were helped by the Dispensary. With the formation of the Medical Center, this work will be continued and expanded.

By the erection of a modern children's hospital building, the Boston Floating Hospital will resume its great humanitarian work of caring for the sick poor babies of Boston—a work which was curtailed in 1927 when the Hospital's ship burned. By building on shore the Hospital, instead of operating for only a few weeks in the summer, will be able to care for children the year round, and so provide a greater number of hospital days' care.

Among the services which the Floating Hospital will render will be extensive research in children's diseases, the training of nurses and the education of mothers in the care of sick children.

The uniting of three institutions into a single unit will be of great advantage to each of them in carrying on its own individual work. While uniting forces, the three institutions will maintain their separate identities and continue rendering the same high type of service they have rendered in the past.

Tufts College Medical School will benefit enormously by increased opportunities for teaching material. The Boston Dispensary will benefit similarly by enlarged opportunities for study, research and teaching, which will not only stimulate its work but will tend to attract the very best men to its medical staff. The Boston Floating Hospital will benefit by securing an eminent medical staff and extensive scientific and research facilities—advantages beyond the reach of a small, separate hospital.

In addition are the advantages inherent in any merger—economies gained through reduced overhead. Laboratories, operating rooms, x-ray plant, dining rooms, kitchen, laundry, power plant and pharmacy will be shared in common at far less cost than would be possible if these services were provided separately.

The new Medical Center will be established at the present site of the Boston Dispensary. The Dispensary itself will be remodeled, a forty-bed hospital for babies and small children will be erected, and a third building constructed to provide additional clinics, teaching facilities and a dormitory for nurses.

In order to carry out these plans $970,000 will be required for buildings and $530,000 for endowment to provide additional income necessary to the three institutions. The total amount needed is $1,500,000.

The securing of this sum will make possible a great forward step for better health in New England.

THE NEW ENGLAND MEDICAL CENTER

Hon. Channing H. Cox, General Chairman.

Governor Frank G. Allen, Chairman of Advisory Committee.

Francis C. Gray, Treasurer.

Arthur G. Rotch, Chairman of Executive Committee.

Ralph Lowell, Chairman of Men's Committee.

Mrs. R. M. Saltonstall, Chairman of Women's Committee.

Dr. Roger I. Lee, Chairman of Doctors' Committee.

Dr. A. Warren Stearns, Chairman of Tufts Alumni Committee.

Executive Committee: Allston Burr, Ashton L. Carr, Earle P. Charlton, John A. Cousens, Henry V. Cunningham, Carl Dreyfus, Charles R. Gow, Mrs. Richard Harte, Ralph Hornblower, James Jackson, Dr. Roger I. Lee, Ralph Lowell, John R. Macomber, Robert W. Maynard, Francis S. Moulton, James Nowell, Rev. George P. O'Conor, Edward W. Pope, Arthur G. Rotch, Richard Saltonstall, Mrs. R. M. Saltonstall, Henry B. Sawyer, Bernard W. Scharff, R. Minturn Sedgwick, Dr. A. Warren Stearns.

Headquarters: 100 Milk Street, Boston, Hancock 5985.

CORRESPONDENCE

REREGISTRATION OF PHYSICIANS

The Commonwealth of Massachusetts
Department of Civil Service and Registration
Board of Registration in Medicine
State House, Boston
December 12, 1929.

Editor, N. E. JOURNAL OF MEDICINE,
165 Newbury Street,
Boston, Massachusetts.

Dear Sir:

In my letter of December 3, 1929, I made some reference to legislative measures which might be introduced in the coming session in regard to relisting of registered physicians in active practice in Massachusetts. I am submitting, herewith, copies of such measures which have been approved by the Board as necessary legislation to establish an up-to-date and accurate record of physicians registered in Massachusetts.

The benefits to be derived by such legislation are fairly obvious. Owing to the fact that neighboring states have annual registration now and have driven illegitimate practitioners from their own states, it is probable that Massachusetts is becoming the harbor for a large number of these quacks. In the survey following the introduction of the New York law two years ago, it was found there was one out of four individuals engaged in the healing arts who had no legal right to be so engaged.

An accurate listing of registered physicians once established will enable the Board through its investigator supplied by the Department of Public Safety, to check up where deaths and removals have occurred. The slight change in G. L. Chapter 112, Section 8 will not bring any extra burden upon the physicians. It is felt that it is unnecessary to require physicians in small towns to report changes of addresses within that town as they are comparatively easy to locate at all times.

In regard to the proposed bill for re-registration, you will note that it does not require an annual registration.

Very truly yours,
DR. FRANK M. VAUGHAN, *Secretary.*

Commonwealth of Massachusetts
Board of Registration in Medicine
Registration of Certificate
General Laws, Chapter 112

Section 8. No person shall enter upon, or continue in, the practice of medicine within the commonwealth until he has presented to the clerk of the town where he has, or intends to have, an office or his usual place of business, his certificate of registration as a physician in the commonwealth, or, if it is lost, a certified statement issued by the board, setting forth all the material facts in the original certificate; *and record his business address,* and a fee of twenty-five cents. *Each physician located in a town where the population is ten thousand or more shall notify the town clerk of any change in his business location following the original report of his address.* Thereupon the clerk shall record the name of the owner of said certificate or certified statement, together with the date of record, upon blanks approved by the board, said blanks to be so arranged that a duplicate carbon copy shall be made at the time of the original record. He shall keep the original as a part of his official records and it shall be open to public inspection. He shall, within twenty-four hours after such recording, forward the duplicate to the board. Whoever practices or attempts to practice medicine without complying with this section or whoever submits to a town clerk a false or fraudulent certificate or certified statement, shall be punished by a fine of not less than five nor more than one hundred dollars; and any town clerk who refuses or neglects to comply with this section shall be punished by a fine of not less than five nor more than ten dollars.

Proposed Bill for Re-Registration of Physicians

Every physician lawfully authorized to practice medicine within this commonwealth on the effective date of this act shall record with the Board of Registration in Medicine, on or before January 1, 1931, his registration number, professional address, and such other information as may be required. A fee of $2.00 shall accompany this report.

Failure to comply with the requirements of this act shall be punishable by a fine of not more than $50.00.

RECENT DEATH

BOWDITCH—DR. VINCENT YARDLEY BOWDITCH, an expert in the diagnosis and treatment of pulmonary tuberculosis, founder of the Sharon Sanatorium, died at his home in Boston, December 20, 1929, aged 77.

NEWS ITEM

$15,950,000 HOSPITAL BILL TO PRESIDENT—Washington, December 19 (A.P.)—The House today accepted the Senate amendments to the Rogers veterans' hospitalization bill increasing the amount authorized from $14,000,000 to $15,950,000. The bill now goes to the President.—*Boston Transcript.*

NOTICE

A WIDOW OF A PHYSICIAN NEEDS ASSISTANCE

A widow of a physician in straitened circumstances would like to arrange for renting two or three rooms in Boston, one of which may be suitable for a physician's office.

On application to this office, particulars will be furnished.

REPORTS AND NOTICES OF MEETINGS

THE HAMPSHIRE DISTRICT MEDICAL SOCIETY

Hampshire District has been most fortunate in having two of the best meetings this fall that have been held for some time. The October meeting was

addressed by Dr. Frederick D. Jones of Springfield on "Some unusual experiences of the medical examiner." Dr. Jones showed two specimens of most unusual conditions found at autopsy. The December meeting was addressed by Dr. Rafe Nelson Hatt, chief surgeon of the Shriners' Hospital for Crippled Children at Springfield, on "Some orthopedic problems in general practice," a very interesting and helpful discourse.

LUTHER O. WHITMAN, *Secretary.*

THE NORTH SHORE MEDICAL FRATERNITY

Dr. Jacob Fine addressed the members of the North Shore Medical Fraternity Tuesday, December 17, at Huntt's Grill, Lynn. His topic, "Surgery and the Lymphatic Vascular System," was interesting and timely, showing the trend of surgery toward physiological pathology.

An unusually large attendance was instructively entertained.

A. H. COVNER, *Secretary.*

PROGRAM OF THE NEW ENGLAND SECTIONAL MEETING OF THE AMERICAN COLLEGE OF SURGEONS AT WORCESTER, MASS., JANUARY 6-7, 1930

Headquarters and registration in the lobby of the Bancroft Hotel, Monday, January 6.

Operative and dry Clinics at the hospitals on the morning of the first day.

A Hospital Conference at 2.00 P. M. on Monday, the 6th, in the Bancroft Hotel.

A Community Health Meeting in the ballroom of the Bancroft Hotel at 8 P. M., Monday, January 6.

Operative and dry Clinics at the hospitals on the morning of the second day.

Scientific Meeting in the ballroom of the Bancroft Hotel, Tuesday, 2.00 P. M.

For hotel reservations communicate with Dr. E. H. Trowbridge, 36 Pleasant Street, Worcester, Mass.

Detailed information concerning the various meetings may be obtained from the complete program to be secured from Dr. Benjamin H. Alton, Secretary, 27 Elm Street, Worcester, Mass.

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES

1929-1930—Massachusetts Dietetic Association. Complete schedule appears on page 852, issue of October 24.

January 6-7—The Sectional Meeting of the American College of Surgeons. Detailed notice appears above.

January 7—The next meeting of the Greater Boston Medical Society will take place on this date.

February 3—American Heart Association. Complete notice appears on page 1181, issue of December 5.

February 10-14, 1930—American College of Physicians. Complete notice appears on page 853, issue of October 24.

March-October, 1930—International Medical Postgraduate Courses in Berlin. Complete notice appears on page 853, issue of October 24.

September 4-8, 1930—Fifth International Congress on Physiotherapy. Complete notice appears on page 906, issue of October 31.

October 27, 1930—The American Public Health Association. Detailed notice appears on page 1271, issue of December 19.

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

January 8, 1930—Wednesday—Semi-annual meeting at Centre Church Vestries, Main Street, corner of Vestry Street, opposite City Hall, Haverhill, (Telephone 548) at 12:30 sharp.

May 1—Thursday—Censors' meeting at Hotel Bartlett, 95 Main Street, Haverhill, (Telephone 3430) at 2 P. M. sharp. Candidates should present their diplomas to the Secretary one week in advance.

May 7—Wednesday—Annual Meeting.

J. FORREST BURNHAM, Secretary.

Essex South District Medical Society

Wednesday, January 8, 1930—At the Beverly Hospital. Clinic 5 P. M. Dinner 7 P. M. Speaker: Dr. Harry H. Germain, Boston. Subject: "Some Aspects of Cancer of the Colon." General Discussion from the floor.

Wednesday, February 5, 1930—Council Meeting, Boston.

Wednesday, February 12, 1930—Danvers State Hospital, Hathorne. Clinic 5 P. M. Dinner 7 P. M. Speakers: Dr. Winfred Overholser. Subject: "Criminology and Psychiatry." Mr. Clark, District Attorney for Essex County, who will speak on the legal aspect.

Wednesday, March 5, 1930—Lynn Hospital. Clinic 5 P. M. Dinner 7 P. M. Speaker: Dr. R. S. Titus, Boston. Subject: "Some Aspects of Caesarean Section," illustrated with Moving Pictures. General Discussion from the floor.

Wednesday, April 2, 1930—Hotel Hawthorne, Salem. Dinner at 7 P. M. Speaker: Dr. Timothy Leary, Boston. Subject: "Diagnostic and Therapeutic Pitfalls in Intracranial Pyogenic Infections."

Thursday, May 1, 1930—Censors meet for Examination of Candidates at Salem Hospital at 3:30 P. M.

Tuesday, May 13, 1930—Annual Meeting. The Tavern, Gloucester. Speaker: Dr. C. Macfie Campbell, Director of Boston Psychopathic Hospital. Subject to be announced later. Ladies invited. Dancing.

R. E. STONE, M.D., Secretary.

Franklin District Medical Society

The meetings of the Franklin District Medical Society will be held at the Weldon Hotel, Greenfield, Mass., on the second Tuesdays of January, March and May, at 11 A. M.

CHARLES MOLINE, Secretary.

Hampshire District Medical Society

Meetings of Hampshire District will occur at 11 A. M. the second Wednesdays of February and April and will be held at the Dickinson Hospital, Northampton. The annual meeting will be held in May.

LUTHER O. WHITMAN, M.D., Secretary.

Middlesex East District Medical Society

January 15—At Boston, Harvard Club.

March 12—At Melrose.

May 13—At Unicorn Country Club, Stoneham.

ALLAN R. CUNNINGHAM, Secretary.

Middlesex South District Medical Society

Winter meetings—jointly with Suffolk District.

April 16, 1930—Annual meeting. Commander Hotel, Cambridge. Program to be announced.

May, 1930—Censors' meeting.

ALEXANDER A. LEVI, Secretary.

Norfolk District Medical Society

January 27, 1930—Roxbury Masonic Temple. "Recent Advances in Diagnosis and Treatment of Syphilis." The speakers will be Drs. C. Morton Smith and Austin W. Cheever.

February 24, 1930—Roxbury Masonic Temple, 8:00. Dr. Edwin H. Place has been invited to read a paper and has been given carte blanche in the selection of his subject.

March 24, 1930—Roxbury Masonic Temple. Dr. Burton E. Hamilton. Subject to be announced.

May 6, 1930—Annual Meeting. Program to be announced.

The Censors meet for the examination of candidates, May 1, 1930, in the Roxbury Masonic Temple, 171 Warren Street, Roxbury, at 4:00 P. M.

Applications must be in the hands of the Secretary at least one week previous to date of examination.

Owing to inability to engage the Roxbury Masonic Apartments on the last Tuesday of the month, such meetings as will be held in the Roxbury Temple will be held Monday evenings as per the dates above.

FRANK S. CRUICKSHANK,
Secretary, Norfolk District Medical Society.